

عنوان مقاله:

A Low Cost Sensorless Control Drive Circuit for of Low Voltage Switched Reluctance Motor

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نویسندگان:

A. Aujloo - , Shahid Beheshti University

E. Afjei - Department of Electrical Engineering, Shahid Beheshti University

خلاصه مقاله:

Shaft position sensing is an essential part of switched reluctance (SR) motor drive. In order to synchronize the pulses of phase current with the period of rising inductance of the proper motor phase. Direct sensors such as, Hall effect and optical encoder are commonly used in SR motors. The purpose of this paper is to present an indirect shaft positioning sensing known as "sensorless " control for switched reluctance motor. It uses stator inductance measurement technique by multiplexing each phase inductance to predict the rotor position and also using a micro controller to produce proper gate pulses for the motor phases. This circuit has the ability of controlling the proper advancement of firing time for each power transistor (adjusting the dwell angle) in the drive circuit either manually or automatically for different speeds. It has also the option of selecting the direction of rotation for the motor and uses a PWM scheme for variable speed as well as, a full stop braking system. This control circuit in conjunction with a two switch per phase configuration converter drive has been tested on a ۳۵W, ۱۲V; ۳-phase switched reluctance motor .and the test results are presented

کلمات کلیدی:

Switched Reluctance Motor Drive, sensorless, Indirect Rotor, Position Sensing Scheme

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