A capacitor start three phase induction motor

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Abstract

A scheme for the fast starting of three-phase induction motors is proposed. This scheme is based on starting the motor from a single-phase power supply with the help of a phase balancer properly selected for achieving maximum starting torque. As the speed reaches a predetermined value, a simple centrifugal switch is used to reconnect the motor to the three-phase supply. The feasibility of the proposed scheme is proven through the development of a rigorous state-space mathematical model and its associated digital simulation, followed by experimental verification.