

Design and modeling of the circuit for starting three phase induction motors balanced single phase feeders

farzad zolfaghari*,smaeil fallah,

Abstract: Induction motors are used in a wide range of domestic and industrial applications. These motors are often made with single or three phases more over they can be wound-rotor or squirrel cage rotor. In low power applications single phase motors with single phase feeder are often used. however three phase motors can be used in these cases. Using three phase motors instead of single phase ones has the advantage of more efficiency. Because the efficiency of three phase motors is more than the single phase ones in the same power. There are some circuits that are used for feeding three phase induction motors a single phase power source among them is the Steinmetz circuit. That includes one selfinductor and one capacitor using selfinductor is the main draw back of old motors. Because a self -inductor is more expensive and it takes large space for this reason circuits that use two capacitances are less expensive and more efficient. In the present research a new circuit that feeds three phase induction motor a single phase power source has been studied and analysed the circuit use two capacitors. Capacitors were calculated in a way that motor works near the balance condition. Theoretical analysis was verified by experiment result. **Key Words:** Single Phase Induction Motor, Symmetrical Compound Method, Triggered Single Phase Induction Motor

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