

Abstract

An inductive contactless starter can be provided for single-phase AC motor, which can be designed to start a compressor motor with a starting capacitor or a common single-phase AC motor. The starter can comprise a current mutual-inductor L composed of two primary coils and a secondary coil, a gate capacitor C_0 , a triac T , and a Positive Temperature Coefficient (PCT) resistor R_t . By sampling relevant current signals with the current mutual-inductor, the starter can effectively control heat loss of the current sampling system down to milliwatt level (i.e., the starter is a “zero power loss” starter for single-phase AC motor), and thereby can improve energy efficiency greatly. Additionally, the starter can have a simple circuit and fewer components, and is reliable, improving reliability of the motor starting system while delivering motor starting function.