Static and Dynamic Performance Analysis of SPWM Inverter for Agricultural Applications

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ABSTRACT

This paper deals with a pulse width modulation (PWM) switching strategy through carrier modification. The Proposed Sinusoidal PWM (SPWM) technique, which compares the sinusoidal reference signal and a carrier triangular signal. It has a better spectral quality and a higher fundamental component compared to the conventional PWM (PWM) without any pulse dropping. It improves the fundamental output voltage, especially for lower Modulation index ranges, by reducing total harmonic distortion (THD) and device switching losses are minimized. The presented mathematical Preliminaries for SPWM give a conceptual understanding and a comparison of the strategies. For varying levels of modulation index, full comparisons of the harmonic content were discussed. This inverter will be modeled for agricultural applications.

Keywords: S*inusoidal carrier pulse width modulation (SPWM), Inverter, THD.*