

Implementing the Venturini Modulation technique for controlling an AC/AC Matrix Converter

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Abstract – These abstract focuses on the implementation of the Venturini modulation technique for controlling a three-phase matrix converter. The Venturini modulation technique is a widely adopted method in the field of power electronics, utilized to achieve precise control over the operation and performance of converters. In this particular application, the technique is employed to regulate and optimize a three-phase matrix converter's functionality. The three-phase matrix converter serves as a specialized power electronic device responsible for converting electrical energy between three-phase systems with varying voltage and frequency. By implementing the Venturini modulation technique, the converter's operation can be optimized, ensuring efficient power conversion and optimal utilization of its resources. The Venturini modulation technique enables the converter to accurately control the output voltage and frequency, resulting in improved power quality and enhanced overall system performance. To implement this technique, specific control algorithms and strategies are employed, allowing the converter to dynamically adjust the switching patterns of its semiconductor switches, thereby generating the desired output waveform.

In summary, the implementation of the Venturini modulation technique for controlling a three-phase matrix converter is a vital step in optimizing power conversion, improving power quality, and enhancing overall system performance. This abstract highlight the importance of this implementation and its potential impact on power electronics and electrical systems in diverse applications.

Keywords – Venturini Modulation technique, Three-Phase Matrix Converter, Controlling