

High Frequency High Power Full Bridge Converter for Plasma Torches

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Abstract

© Published under licence by IOP Publishing Ltd. This paper presents a full bridge converter with a high speed rectifier and filter for plasma torches. Full bridge circuit with high frequency pulse width modulation control is used and high frequency transformer to insulate is adopted. For Argon (Ar) gas Plasma Torches, and by increasing the pulse width the average power consumption has modified from 1KW to 5.6KW (positive load). For Nitrogen (N₂) gas Plasma Torches, and by increasing the pulse width the average power consumption has reduced from 7.7KW down to 3KW (negative load). For the Plasma Torches load the frequency of converter was steady at 50KHz.

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Keywords

Filters, Full Bridge Converters, Mosfet, Plasma Torches, Power Pulse

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