

MONOPOLAR HYBRID CASCADED DC/DC CONVERTER FOR HVDC POWER SYSTEMS

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ABSTRACT

Due to significant advantages such long-distance power transmission, decreased losses, asynchronous grid connections, controllability, system availability, and restricted short-circuit currents, high voltage direct current (HVDC) technology is a crucial part of power systems. Huge amounts of power can be efficiently and cheaply sent across great distances with low loss using HVDC transmission. While balancing the grid, it can also connect asynchronous alternate current (AC) networks. One of the most crucial parts of HVDC power transmission and the foundation of HVDC grid interconnections are DC/DC converters. For medium/high-voltage DC grid connections, DC/DC MMC is a well respected converter architecture. Modern HVDC networks have variable voltage levels, and DC/DC MMC topologies are crucial to these networks. Current systems have high power losses, voltage ripples, and current fluctuations.

KEYWORDS: *Cascaded Converter, HCDC, MMC, Single Switch*