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(54) GATE DRIVE GROUNDING SCHEME IN MOTOR DRIVE SYSTEMS FOR WIDE INPUT DC LINK VOLTAGE

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(57) **ABSTRACT**

A motor drive system includes a direct current (DC) bus that provides a DC link voltage across a DC link capacitor, and a split DC link mid-point circuit connected in parallel with the DC link capacitor. The split DC link mid-point circuit establishes a mid-point reference based on the DC link voltage. A power inverter is in signal communication with the DC bus. The power inverter includes one or more gate driver units configured to drive one or more corresponding switches. Each gate driver unit includes a mid-point ground connection that is connected to the mid-point reference. The split DC link mid-point circuit can define a voltage divide that establishes the mid-point reference and can be used to monitor the DC link voltage.