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[54] **SYSTEM FOR MEASURING LINE TO GROUND IMPEDANCE**

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[57] **ABSTRACT**

A line isolation monitor (LIM) indicates the maximum hazard current of an ungrounded polyphase power distribution system. The LIM is microcontroller based and continuously monitors a fault impedance for the distribution system. The fault impedance is determined by the LIM by injecting a continuous sine wave measurement current into a ground terminal to generate a measurement voltage across the fault impedance. Using the measurement voltage and current, the LIM calculates the fault impedance and, using this impedance, calculates the hazard current based on the maximum line to ground voltage of the ungrounded system. The LIM has means for self-calibration and self-testing while on-line and during a power-up sequence to verify that components in the measurement circuitry are within specified tolerances.

22 Claims, 10 Drawing Sheets