



US005448491A

United States Patent [19]

[11] Patent Number: **5,448,491**

Janke et al.

[45] Date of Patent: **Sep. 5, 1995**

- [54] **MONITOR FOR AN UNGROUNDED SYSTEM**
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- [21] Appl. No.: **215,435**
- [22] Filed: **Mar. 21, 1994**
- [51] Int. Cl.⁶ **G01R 19/00**
- [52] U.S. Cl. **364/483**; 364/550; 364/482; 364/571.01; 324/509; 324/500; 340/635; 340/650; 361/42
- [58] **Field of Search** 364/550, 551.01, 556, 364/571.01, 571.02, 481, 482, 483; 324/509, 500, 512, 522, 527, 555, 601; 73/1 R; 340/635, 650, 651; 361/42, 111, 107, 88

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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 of 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 hazard current is displayed and if it exceeds a predetermined threshold, the LIM will provide audio and visual alarms. A serial communications channel allows the LIM to communicate with other intelligent devices. The LIM has means for self-calibration and self-testing while on-line and during a power-up sequence. Line frequency is also determined by the LIM. Two LIMs can be used to monitor the same distribution system at the same time without interfering with each other.

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30 Claims, 10 Drawing Sheets

