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Yin et al.

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[54] **PULSED VOLTAGE SURGE RESISTANT MAGNET WIRE**

FOREIGN PATENT DOCUMENTS

0 396 928 11/1990 European Pat. Off. .

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OTHER PUBLICATIONS

[73] Assignee: **Phelps Dodge Industries, Inc.**, Fort Wayne, Ind.

J.A. Oliver and G.C. Stone "Implication for the Application of Adjustable Speed Drive Electronics to Motor Stator Winding Insulation", IEEE Electrical Insulation Magazine, Jul./Aug. 1995, vol. 11, No. 4, pp. 32-36.

[*] Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Weijun Yin, Keith Bultemeier, Don Barta and Dan Floryan, "Critical Factors for Early Failure of Magnet Wires in Inverter-Fed Motors", IEEE 1995 Annual Report Conference on Electrical Insulation and Dielectric Phenomena, pp. 258-261.

This patent is subject to a terminal disclaimer.

Weijun Yin, Keith Bultemeier, Don Barta and Dan Floryan, Dielectric Integrity of Magnet Wire Insulations Under Multi-Stresses, Proceeding of EEIC/EMCW, 1995, pp. 257-261.

[21] Appl. No.: **08/480,460**

Analysis of the Impact of Pulse-Width Modulated Inverter Voltage Waveforms on A.C. Induction Motors; Austin H. Bennett; U.S. Electrical Motors, Division of Emerson Electric; no date.

[22] Filed: **Jun. 8, 1995**

[51] **Int. Cl.⁷** **D02G 3/00**

Corena Resistant Turn Insulation in AC Rotating Machine; D.R. Johnston, J. T. LaForte; Gen. Elec. Co.; no date.

[52] **U.S. Cl.** **428/372**; 428/375; 428/379; 428/380; 428/383; 428/384; 428/386; 428/387; 428/389; 174/110 A; 174/110 E; 174/110 N; 174/110 PM; 174/110 SR; 174/120 SR; 174/127

Effect of Surge Wave Reflection Inside a Motor on Voltage Distribution Across Stator Windings; O.M. Nassar; Aramco; Apr. 1985; Saudi Arabia.

[58] **Field of Search** 428/372, 378, 428/379, 280, 383, 384, 386, 387, 389; 174/120 SR, 110 A, 110 SR, 110 N, 110 PM, 110 E, 127, 118, 110 R

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[57] **ABSTRACT**

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A pulsed voltage surge resistant magnet wire comprising a conductor, a continuous and concentric and flexible uniform coat of base insulation material superimposed on the conductor. An essentially continuous and concentric and uniform pulsed voltage surge shield overlaying the coat of base insulation material. The shield has therein an effective amount of a particulate material. The shield is superimposed on the coat of base insulation material, and has a continuous and concentric and flexible and uniform top coat of insulation material superimposed thereon.

(List continued on next page.)

36 Claims, 1 Drawing Sheet

