

Title (en)  
METHOD FOR DETECTING PLASMA BEARING CURRENTS

Title (de)  
VERFAHREN ZUR DETEKTION VON PLASMA-LAGERSTRÖMEN

Title (fr)  
PROCÉDÉ DE DÉTECTION DE COURANTS DE PALIER ENTRAÎNANT UNE FORMATION DE PLASMA

Publication  
**EP 2513642 A1 20121024 (DE)**

Application  
**EP 10710780 A 20100224**

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Abstract (en)  
[origin: WO2011103883A1] In electric machines, electric currents that significantly reduce the service life of the bearings can occur. Bearing currents are electric currents that occur in rolling or plain bearings of electric machines. The invention relates to a method for the early detection of the development of damage in a bearing, in particular crater formation, owing to bearing currents as a result of a lack of heat dissipation in the case of a short discharge time, plasma formation being detected on the basis of the evaluation of an electromagnetic spectrum of the field strength that arises during the discharge. The solution is based on the following basic concepts: The discharges due to the bearing currents must be considered as a chronologically dynamic process. A discharge must occur within a short time, e.g., in the three-digit picosecond range, in order to produce craters that lead to groove formation. If the discharge occurs slowly, only melting and solidification with crater formation and low material removal occur. Said craters do not lead to groove formation. In contrast, if a faster discharge occurs, the heat dissipation is less.

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