

## **Bearing Currents in Converter Operation**

Modern drive systems can be characterized more and more by a variable speed operation. The advantage is mainly the optimization of the efficiency for the entire process of the plant. When operating electric motors in state-of-the-art drive systems, a series of parasitic effects occur as a result of the fast-switching converters. One of these is the current that flows through the motor bearings. Possible arc discharges in the lubricant gap can melt or vaporize material in the bearing raceways. This leads to a normal grey-frosted raceway with no influence on the bearing lifetime or to so called corrugated patterns which reduce the bearing lifetime. Unscheduled maintenance and therefore higher costs are the result. Bearing currents are a system related topic. The damping of bearing currents and thus the reduction of the impact on the motor bearings is possible. This presentation shows the main causes and the most important countermeasures.

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