

For further information, please contact:

Nia Kihlström, SKF Group Communication, +46 31-337 2897; +46 706 67 28 97; nia.kihlstrom@skf.com
Colin Roberts, SKF Group Communication; +31 30 6075608; +31 653 944 111; colin.roberts@skf.com

New SKF sensor bearing with EMC filter protects against power surge induced damage

Gothenburg, 16 April, 2013: SKF has launched a new sensor bearing with improved protection against power surges. The new bearing is typically used in electric motors. It has an in-line electromagnetic compatibility (EMC) filter that protects the sensitive sensor bearing electronics from high electric stresses.

“When you compare the nominal lifetime of a machine element like a bearing with the nominal lifetime of electronics like a sensor, you will find that the electronic component will most of the time exceed the mechanical by far. But often, the reality looks quite different, as the electronic component in the industrial environment faces electric overloading like power surges and electric discharges. The EMC filter, when applied in-line with the cable, improves sensor bearing reliability, reduces downtime and decreases maintenance costs”, says Olivier Message, SKF Director Sensor bearings.

In several difficult applications, such as fork-lifts operating in sugar factories, or fork-lift operating on insulated floors, a very strong electrostatic charge build-up can happen on the fork-lift frame, which is discharged abruptly, for instance when there is proximity of the fork-lift frame to the warehouse steel racks. The discharge spark can have a damaging effect on electronics. The resulting discharge spark may not have a direct impact on sensors or the control unit, but the change in voltage can have a “rebound” effect creating voltage surges in the lines. These voltage surges, which can result in Electrical Fast Transients (EFTs) ranging from 100 to 4000 V, can have a temporary impact on the electricity supply, or damage the controller or sensors completely.

SKF analyzed this phenomenon as it relates to sensor bearings, and was able to develop an in-line filter to protect the Hall sensor and other electronics used in its bearings.

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SKF is a leading global supplier of bearings, seals, mechatronics, lubrication systems, and services which include technical support, maintenance and reliability services, engineering consulting and training. SKF is represented in more than 130 countries and has around 15,000 distributor locations worldwide. Annual sales in 2012 were SEK 64,757 million and the number of employees was 46,775. www.skf.com

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