

Schaeffler Global Technology Solutions

Electric motors

ATB Schorch GmbH, Germany

FAG SmartCheck for the Real Time Monitoring of Electric Motors

Schorch manufactures state-of-the-art asynchronous machines for many different industries, including the oil and gas industries, the chemical and petrochemical industries, power generation, water management, shipbuilding and test rig applications. The company's broad product portfolio comprises – in addition to standard industrial motors – primarily customer-specific drive solutions. An international marketing and service network guarantees optimal customer support.

Challenge for Schaeffler

Defects in electric motors that manifest themselves in an increased noise level and vibration are often caused by bearing damage or electric influences. These defects can cause motor failure. As a manufacturer of high quality electric motors, Schorch wishes to avoid any unscheduled shutdowns and failures of its electric motors. For this reason, the company decided to employ permanent vibration measurement that provides the data for condition-based machine diagnosis. In addition, other parameters such as temperature fluctuations in the motor and in its environment were to be included into the analysis.

Schaeffler Solution

The FAG SmartCheck meets Schorch's requirements in every respect. Due to its attractive price performance ratio makes the installation on many machines becomes cost-efficient for the first time. With this highperformance system, users can very easily record vibration data as well as other process parameters – such as temperature, load and speed – and correlate them with each other over several years. This broad basis of information permits them to make a comprehensive assessment of a machine's condition that cannot be obtained with 'isolated' monitoring systems.



SCHORCH

Product portfolio

- Three-phase motors
- Standard motors
- High voltage motors up to 25 MW
- Explosion-proof motors
- Change-pole motors
- Slipping induction motors
- High-speed drives

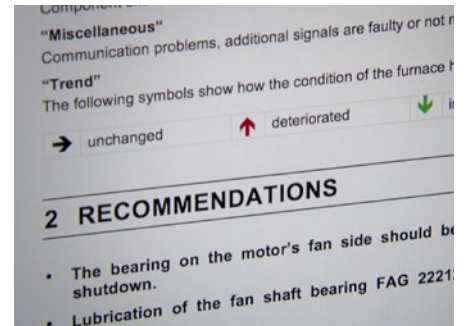




FAG SmartCheck



Electric motors



Measurement report containing precise recommendations

Customer Benefit

The FAG SmartCheck supplements the high quality standard Schorch applies to its products and services. End customers expect Schorch to provide electric motors with a maximum level of availability and a long service life. The FAG SmartCheck makes a valuable contribution towards this. As defects and damage – for example in rolling bearings – are detected at an early stage, companies are able to take countermeasures before a motor actually fails. In addition, the newly acquired information goes directly into the company's product development activities. In this way customers benefit from increasingly sophisticated and constantly further developed products that always represent the state of the art.

What's special

The FAG SmartCheck is a flexible, modular system. This opens up new possibilities both for the Schorch after sales department and for the end customers that use the system. The recorded data can be made available directly at the FAG SmartCheck (via the Ethernet interface) and worldwide via remote access. This saves service costs for both manufacturer and customer. End customers – in addition to direct access – can integrate the system into their PLC or control station and thus pool all relevant information. Further applications that can be monitored with the FAG SmartCheck include:

- pumps
- ventilators

Technical Information about the Solution

Monitoring system used:

FAG SmartCheck

Vibration sensor used:

High-resolution piezo sensor

Monitored operating parameters:

- Bearing temperature
- Ambient temperature
- Speed
- Load

Diagnosis methods:

- Time signal
- Envelope
- Speed and frequency tracking
- Spectrum and trend analysis