

RFID Monitors Monitoring Devices

German industrial services and products company F'IS has added RFID technology to its mobile devices used for monitoring machinery.

By Beth Bacheldor

June 25, 2007—[FAG Industrial Services](#) (F'IS), a German provider of services and tools for manufacturers, has unveiled a new mobile monitoring device that employs RFID to help companies perform automated, predictive maintenance by analyzing the condition of machinery on the factory floor.

The new, optional RFID technology helps ensure the device is being used correctly to check sensors and other measurement points. The measurements must be gathered in the correct sequence every time to determine how well a machine is operating, and whether maintenance needs to be scheduled.

The FAG Detector III is a handheld device employees can use to monitor almost any type of rotating machine component used in a manufacturing process. It can detect imbalance, misalignment, bearing damage and other unusual machinery conditions, says F'IS manager Armin Kempkes. F'IS is a subsidiary of [Schaeffler Group](#), a German developer and manufacturer of precision products for machinery, industrial plants, vehicles and the aerospace industry.

Mobile vibration measuring instruments such as the FAG Detector III are used for early damage detection in rotating machine elements such as ball bearings, and to determine when maintenance is required. "The principal objective [of the FAG Detector III] is to avoid unplanned shutdowns of the customer's machinery," Kempkes explains, "in order to avoid incurring costs and consequent losses."

The device is now available with an RFID technology option that leverages passive tags operating at 13.56 MHz and complies with the ISO 15693 standard. The tags are affixed to machinery, either with screws or bonded by adhesives, at points where measurements are collected. The FAG Detector III's integrated RFID interrogator is designed to read the tag's unique ID number from a maximum distance of up to 4 centimeters, and documents that the correct measurement points are taken in the proper sequence.

Each tag's unique ID number is correlated in a back-end database with either a specific measurement point, or a machine. "Data collection is more reliable, and the risk of selecting the wrong measurement point is excluded," says Kempkes. "Since the measurement point is selected automatically, data can be collected by personnel without any prior knowledge of the plant or machinery." The automation can help reduce human error, he says.

RELATED_ARTICLES The RFID tags are designed to replace the bar codes often used to ensure machinery monitoring devices are working properly. Bar codes wear down and can no longer be read, F'IS says, particularly in the dirty, wet and hot environments of factory floors. The tags F'IS uses can operate at ambient temperatures of up to 120°C, and are resistant to dirt, oil and acids.

RFID continues to make headway in the automation and manufacturing sectors. For example, [Wittmann](#), a

manufacturer of automation systems for the plastics industry, has introduced a system utilizing RFID tags and readers to identify the type of mechanical hand attached to a robot's arm. This enables it to determine the correct sequence it must perform to make plastic parts (see [RFID Instructs Robots at Factories for Plastic Parts](#)).

Copyright ©2005 RFID Journal, Inc. All Rights Reserved