

Schaeffler Global Technology Solutions

Water supply

Perlenbach water supply association, Germany

Plain Text Diagnosis for Improved Process Reliability

The Perlenbach water supply association supplies fresh drinking water to roughly 50 000 residents in seven municipalities in the Eifel region each day. Around 2.4 cubic meters of water are supplied in the area each year, which have been filtered and treated using complex methods until they meet the high requirements defined in the German drinking water regulations.

Challenge for Schaeffler

Increased vibrations and noise on the centrifugal pumps are often due to bearing defects. These irregularities may cause the centrifugal pumps to fail and thus pose a threat to the supply of water. To prevent this, the Perlenbach water supply association decided to change from a temporary pump monitoring system to a continuous pump monitoring system. The objective was to generate long advanced warning times.

Schaeffler Solution

Schaeffler and its authorised distribution partner KSA proposed an innovative solution, the FAG SmartQB. This is a preconfigured plug-and-play system that provides information about the condition of up to six machines or assemblies using plain text messages. As part of a pilot project at the Perlenbach water supply association, two centrifugal pumps were equipped with two FAG SmartQB sensors each and linked with the FAG SmartQB. In the event of irregularities, the FAG SmartLamp installed next to the FAG SmartQB illuminates red and the system generates a message. With only two additional clicks on the touch display, the maintenance technician can view more detailed information about the fault and specific recommended actions.



Technical Information about the Centrifugal Pumps

Pump manufacturer:

RITZ

Pumpe type:

Type 4615

1st and 2st pump:

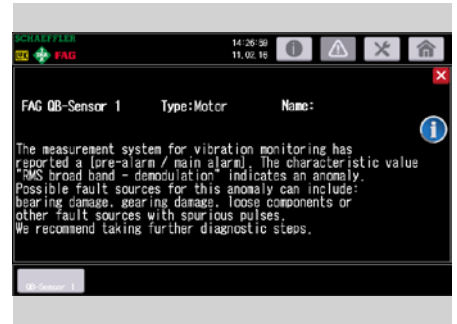
- H geod: 190 m
- Q: 240 m³/h



The FAG SmartQB is a stand-alone complete solution for condition monitoring



FAG SmartQB sensors monitor the condition of pumps on the machine



Automatically generated plain text message about the cause of the fault on the display

Customer Benefit

The FAG SmartQB rounds out the high quality standards and the security of supply that the Perlenbach water supply association offers its customers.

“Conventional systems for machine monitoring are costly and complicated. In contrast, the FAG SmartQB is so easy to use that our employees did not require any specific knowledge about vibration diagnosis. They could get started right away. This convinced us,”

explains Joachim Dankwardt, deputy manager of the water procurement/treatment department at the Perlenbach water supply association.

The system has proven to be very reliable only after a short period. The maintenance personnel were able to react quickly and in a targeted manner thanks to the information and specific fault assessment provided at an early stage about the onset of bearing damage. Both bearings in the 8-stage centrifugal pump were replaced by the maintenance personnel in a very short period of time, thereby preventing severe damage to the facility. Unplanned downtimes of up to several weeks in combination with considerable damage amounting to several thousands of euros could be prevented this way.

What's special

Initial experience with the FAG SmartQB have been so positive that the Perlenbach water supply association considers including further pumps in the monitoring process and integrating the system into the internal maintenance alarm system. This means that all information could also be bundled centrally in addition to the local visualization on the display.

Technical Information about the Solution

Implemented monitoring solution:

- 1 x FAG SmartQB
- 4 x FAG SmartQB sensors
- FAG SmartLamp for reliable remote alarm activation

Monitored operating parameters:

- Vibrations
- Temperature

Accessories:

- 10 m Ethernet cable each for easy installation (Power over Ethernet)