

Customer Success Story

Fluid

High Cost Savings through Online Condition Monitoring and Automatic Lubrication

Customer

Our Belgian customer is primarily responsible for water, air and environmental resources. His field of responsibility includes maintaining the operation of the pump stations.

Challenge for Schaeffler

To avoid flooding in his area, the customer built a pumping station. A catch basin and three propeller pumps in the pumping station ensure that excess water is pumped out and diverted. Inadequate pump monitoring led to the unforeseen failure of a bearing, as a result of which the pump wheel began to vibrate, causing 5 cm of wear to the pump housing. In order to prevent pump failures due to bearing damage in the future, the customer sought to find a predictive monitoring solution for the pumping station.

Schaeffler Solution

Schaeffler experts recommended the automatic lubrication system CONCEPT2 for lubricating the bearings. This solution permits ongoing and reliable lubrication of the bearings. The CONCEPT2 system supplies two lubrication points independently of each other and withstands a pressure of 50 bar. Schaeffler recommended the use of the Schaeffler SmartCheck for monitoring the upper and lower bearings in the motors. Any deviations and changes in vibration behaviour are detected by the SmartCheck and reported via a customer control system, thus allowing incipient bearing damage to be detected at an early stage. The local dealer Supplimax, who is certified by Schaeffler, recommended the systems and will be providing on-site service advice in future.



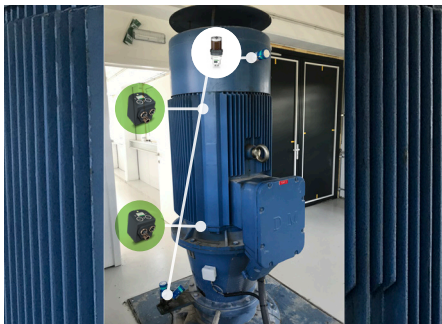
Information about the units

Motor (pump)

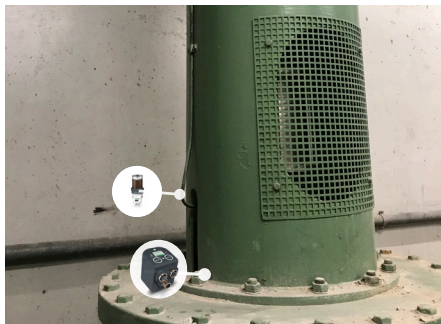
Output – 110 KW

Pump

Output – n:600tr/min – Q:5040m³/h



Motor monitoring with SmartCheck and lubrication system CONCEPT2



SmartCheck and CONCEPT2 for pump monitoring and lubrication



Pump and motor monitoring with SmartCheck and lubrication system CONCEPT2

Customer Benefit

As a result of this holistic, predictive monitoring solution, the customer benefits from the following:

- no unplanned downtime of the pumping station during ongoing operation
- no costs incurred by production stoppages
- no secondary damage to motors and pumps
- low acquisition costs of monitoring systems
- reduced maintenance costs
- increased plant availability
- greater security due to self-reporting systems

Working on the basis of just one occurrence of bearing damage per year, the followingsavings would be achieved with the monitoring systems:

Estimated savings with the SmartCheck and CONCEPT2

Annual maintenance expenditure (8 h)	€ 1.000
One-off expenditure for SmartChecks and CONCEPT2	€ 14.000
Pump damage without monitoring systems	€ 50.000
With monitoring system	
Cost saving following initial occurrence of damage	€ 35.000
Cost saving with each further occurrence of damage	€ 49.000

What's special

As the pumping station is not manned on a permanent basis, remote monitoring provides a sound alternative means of observing the system.

This holistic solution can also be applied and extended to other units in almost any plant.

Contact

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Technical information on the solution

Condition monitoring system SmartCheck

- 9 SmartChecks for 3 pump/motor units
- 2 SmartChecks per unit for top and bottom motor bearings
- 1 SmartCheck on pump bearings

Monitored units

Pump bearings and motor bearings

Monitored operating parameters

Vibration, temperature, speed, cavitation

Diagnostic procedures

Speed, acceleration, and envelope

Lubrication system CONCEPT2

6 lubrication systems CONCEPT2

Lubrication points

Motor and pump bearings

These customer testimonials may also be of interest



Cost savings

A drinking water company uses condition monitoring to avoid plant downtime.



100 percent customer satisfaction

The drinking water supplier Perlenbach relies on Schaeffler solutions for the maintenance of its pumps.