



Customer Success Story

We pioneer motion

Multiple faults diagnosed at early stage

Intelligent condition monitoring of machine and lubrication

Knauf's maintenance department was looking for monitoring solutions for the multitude of its standard units, such as pumps, fans, and electric motors, as well as core production equipment like the rotary kiln. Knauf was impressed with Schaeffler's professional consultation, the simplicity of the solutions, and the possibility of having an overview of all machine types on one user interface. They decided to monitor the product cooling ovens and the motor of the Roto-Packer, among other things, with OPTIME Condition Monitoring (CM).

With success: Only a few months after installation, OPTIME CM reported faults both on a product cooling oven and on the Roto-Packer. Based on this success, Knauf has extended the OPTIME CM solution with another element from the OPTIME Ecosystems (see page 7) – the OPTIME C1. This is a smart lubricator that monitors the status of the lubrication points in the Ecosystem.

Customer benefits

- Cost-efficient solution to monitor machines wirelessly
- Easy reading of the data and alarm via app on smart phone
- Easy and quick installation and initiation of the OPTIME components
- No more manual checking of difficult-to-access machines as the app and the web-based dashboard provide transparency on the machine condition
- Less unplanned downtime of monitored machines

medias.schaeffler.de/en/success-stories

KNAUF

Customer

Knauf Gips KG, Germany

Sector

Cement

Application

Product cooling oven, motor of Roto-Packer

Solution

Condition Monitoring & Smart Lubrication

SCHAEFFLER

What drives our customer ...



Knauf Gips extraction area

Challenge

As it is the case in many manufacturing companies, a lot of machines and components at the Iphofen gypsum plant are subject to heavy wear due to the ambient conditions and the production processes. Among other things, maintenance classifies the product cooling ovens (heat exchangers and fresh air blowers), the packing machine and the rotary kiln to be particularly critical equipment.

In the past, these units have shut down unexpectedly. The cause: Dust and dirt are generated during the manufacture of products for drywall construction, floors, plaster and facades. There is a great danger of dust and dirt accumulating on

the blower blades, for example. In the worst case, this can lead to unplanned breakdowns of the machines.

Many machines are located in dangerous, difficult-to-access areas and thus pose a challenge to occupational safety. The new solution package should take this into account as well. Oliver Burggraf, TPM coordinator, and Matthias Niedner, deputy plant manager and head of maintenance at the Iphofen II plant, summarize the biggest pain point.

It is important for me that we move away from mere reactive maintenance to planned maintenance.

Oliver Burggraf
TPM Coordinator, Iphofen II, Knauf Gips KG

Our customers want to order our products „just in time“, which is why our machines have to run 24/7. Therefore, reliable condition monitoring of our machines and lubrication points is important.

Matthias Niedner
Deputy plant manager, Head of Maintenance Iphofen II,
Knauf Gips KG

What Schaeffler offers ...

Solution

For the different applications, the Schaeffler experts recommended Knauf to use different monitoring solutions. The extra benefit: Maintenance has an overview of all machines with just one user interface.

Product cooling ovens and Roto-Packer

Condition monitoring with OPTIME CM was used for these applications. The scalable solution consists of wireless sensors, a gateway and a digital service that includes automatic data analysis in the cloud and the provision of key information in an app and a web-based dashboard.

Shortly after commissioning, alerts (push messages) were displayed on the OPTIME dashboard for product cooling ovens and Roto-Packers.

Low-frequency vibrations were increasing in the product cooling ovens, which indicated that the fans were unbalanced. It turned out that the blades had caked due to heavy contamination. After cleaning they worked again without any problems.



Figure 1– Fresh air fan product cooling oven 1: low frequency vibration increased, which indicated an imbalance in the fan.

Maintenance also received a warning message via push message on the Roto-Packers. Iso value, envelope curve and temperature were rising, indicating that bearing damage was imminent. In the end, the motor had to be replaced.

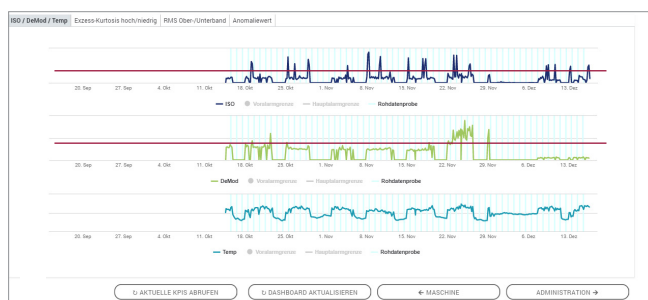


Figure 2 – Roto-Packer: Several parameters changed, including the ISO value and the envelope curve, which indicated that bearing damage was imminent in the motor.

Rotary kiln

For monitoring the rotary kiln, maintenance prefers to use the multi-channel ProLink CMS system. Its high performance makes it possible to reliably monitor the rotary kiln - despite its variable operating conditions and surface temperatures. An LTE router is used to connect the rotary kiln's measurement data to the OPTIME Cloud. Integration into the company's own network is not necessary. Knauf uses the modular ProLink CMS with 11 vibration sensors attached to various bearing housings, gearboxes and motors. The vibration signals are correlated with the number of rotations additionally measured.



Rotary kiln drive



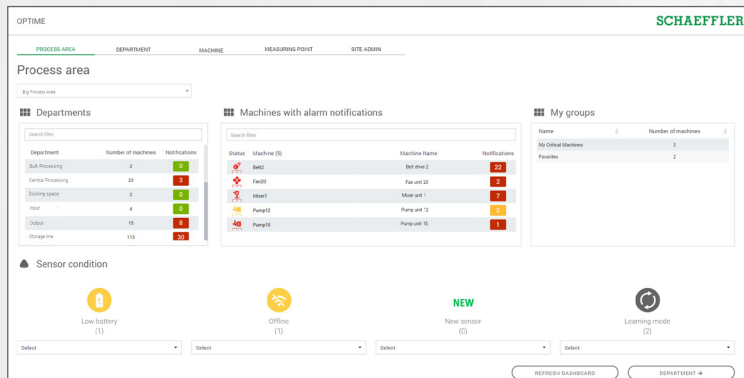
One of the 11 ProLink CMS vibration sensors (see page 5)

WHAT'S SPECIAL

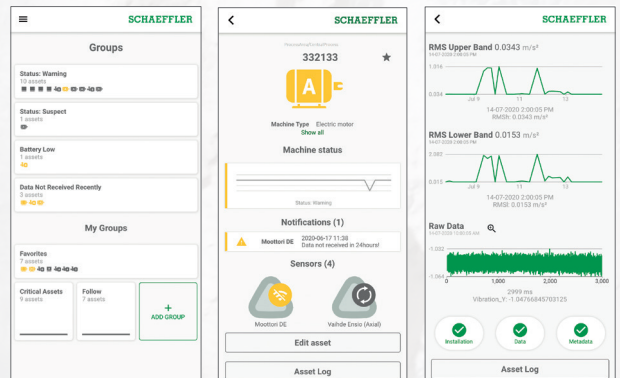
The OPTIME CM monitoring solution is so simple that the maintenance team in Iphofen installed and commissioned it themselves after a brief introduction. This is another reason why Knauf has installed the OPTIME CM monitoring solution in other plants. In the Satteldorf plant, Knauf also uses the additional advantages of the OPTIME Ecosystem, which result from the combination of Condition Monitoring and Smart Lubrication.

OPTIME CM

Detects failures and anomalies.
Maintenance is always informed about
the condition of the machine via a
mobile device.



Via a user interface, customers have a full view of all machine data.



The machine park can be organized individually and easily by managing groups, machines and sensors.



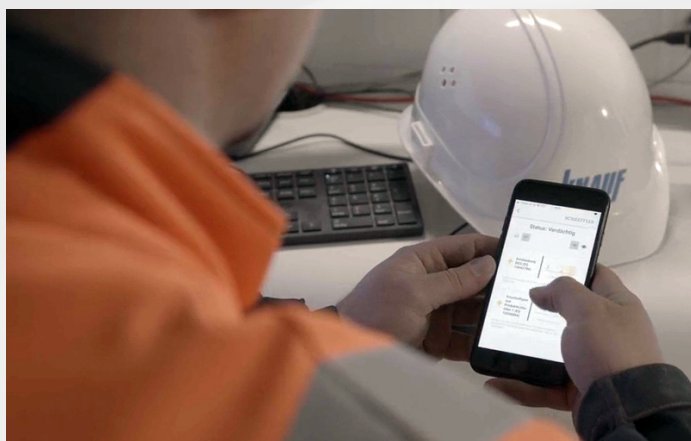
ProLink CMS

The system reliably monitors the rotary kiln at the Iphofen plant. The modular ProLink CMS with 11 vibration sensors is installed to various bearing housings, gear units and motors.

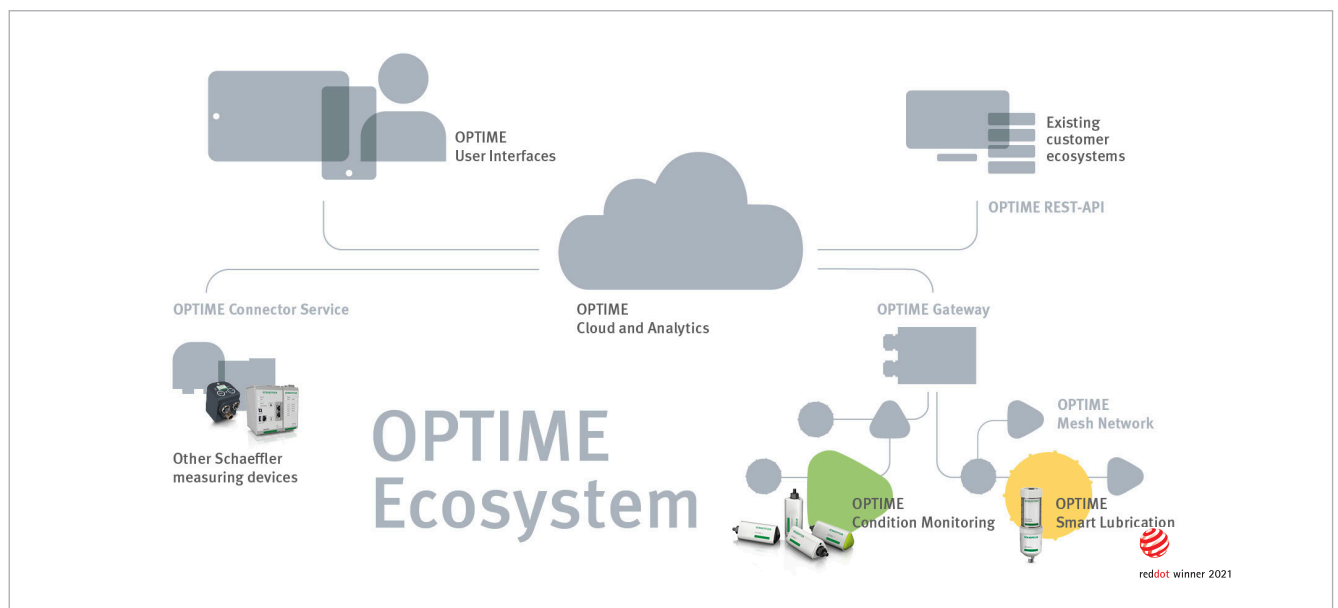


Lubrication system OPTIME C1

The OPTIME Ecosystem user interface lets you keep an eye on all your lubrication points at all times. No walk-through checks anymore.



What Schaeffler offers ...



Schaeffler OPTIME CM won the Red Dot Design Award 2021 in two categories and 5 additional awards during 2020 and 2022

This is how the OPTIME Ecosystem works

The OPTIME Ecosystem consists of many elements that work together to reduce downtime. It begins with our OPTIME User Interface that you can use to get a complete overview of all your machines and lubrication points.

The intuitive mobile app, dashboard and expert viewer mean you always have easy access to the right information at the right time, no matter where you are.

This is made possible by OPTIME Cloud & Analytics. With extensive processing power and capacity, it takes huge amounts of data and makes it easy to understand and work with.

This data comes from your OPTIME vibration sensors and smart lubricators via the OPTIME Gateway: a standalone device that makes secure cloud connectivity and IT integration easy.

Connecting all OPTIME devices is the automatic and self-healing OPTIME Mesh Network. Easy to set up, the mesh network needs low energy and makes large-scale installations possible.

So you can monitor your machines from wherever you are with OPTIME Condition Monitoring and simplify the lubrication of your machines with OPTIME C1.

The OPTIME Ecosystem also includes the OPTIME Connector Service and the OPTIME REST API.

The OPTIME Connector Service lets you connect other devices to the OPTIME Ecosystem quickly and easily.

The OPTIME REST-API makes it easy to connect your OPTIME Ecosystem to other existing systems.

What our customer says ...



With the OPTIME condition monitoring solution, we were able to diagnose the first failures shortly after installation and avoid unplanned downtimes. Adding the intelligent OPTIME C1 relubrication solution opens up completely new possibilities for us. With lubrication and condition monitoring, we can simplify two very important tasks and thus avoid unplanned downtimes. I simply look at my cell phone and have an overview of my machines on just one platform.

It's all easy – with the OPTIME Ecosystem!

Oliver Burggraf
TPM Coordinator, Knauf Gips KG

OPTIME CM, OPTIME C1 and ProLink CMS are part of the Schaeffler Lifetime Solutions portfolio, which offers a comprehensive range of products, services and solutions for industrial maintenance. It is designed to support maintenance professionals over the entire life cycle of a machine.

medias.schaeffler.de/en/lifetime-solutions

Why Schaeffler?

- Technical know-how
- Friendly and competent customer service
- Quick and easy installation

Why this solution?

- Precise data on machine condition
- Wireless and easy to use
- Automatic learning

Customer

Founded in 1932, Knauf, based in Iphofen, Franconia, is one of the world's leading manufacturers of building materials for interior fittings, insulation of buildings and furnishing ceilings. Knauf Gips KG, which operates in Germany, specializes in systems for drywall and flooring, plaster and facades. The plants produce modern drywall systems, plasters and accessories, insulation materials and thermal insulation composite systems worldwide. The group of companies is still family-owned today. It is represented in over 90 countries and operates more than 80 raw stone plants and over 300 factories on all five continents.

