



Customer Success Stories

We pioneer motion

Biochemical production reliably monitored – 30,000 euros saved

With its diverse markets and customers, a leading global food and biochemical company in Asia must always ensure that the machines run smoothly. This is why for many years the biochemical plant has been using Schaeffler's offline and online monitoring solutions for their most critical machines. In search for a comprehensive condition monitoring package, the maintenance team decided on the OPTIME wireless monitoring solution for their increasingly demanding applications.

Customer savings: 30,000 euros

Prevention of unplanned downtime per year: 144 hours (6 days)

Customer benefits

- Real-time condition monitoring
- Autonomous monitoring of 157 pieces of equipment
- Precise trend data
- High efficiency monitoring and analysis
- Increased reliability of monitoring solutions
- Prevention of unplanned downtime
- Early detection of failures

medias.schaeffler.de/en/success-stories

Customer

Food & Biochemistry
Company, SEA

Sector

Food & Biochemistry

Application

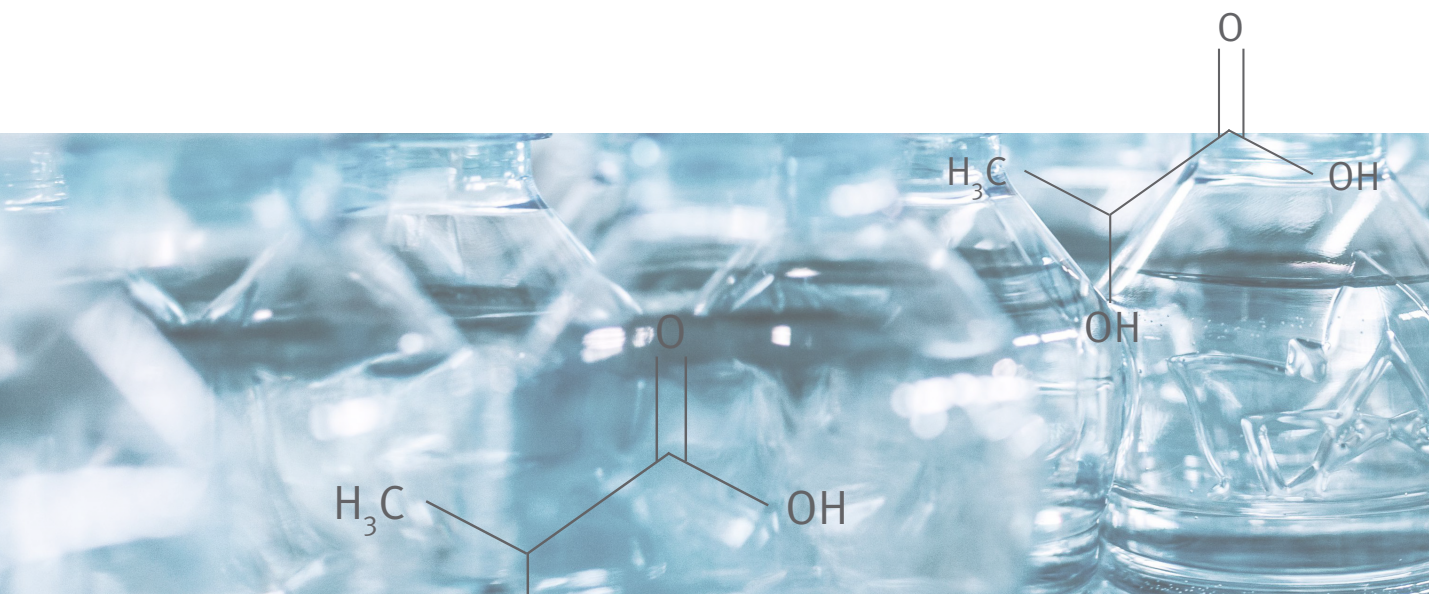
Pumps, cooling tower fans,
agitator gearboxes and chiller
compressors

Solution

Condition Monitoring

SCHAEFFLER

What drives our customer ...



Derivative acid (for example lactic acid) is used for different applications and markets

Challenge

Sustainable products such as bioplastics are becoming increasingly important. The leading supplier of sustainable solutions provides the basis for this. At its biochemical plant complex fermentation processes are carried out to produce derivative acid, which customers use in a wide variety of ways.* During the production of derivative acid (for example lactic acid), the machines are subjected to extreme stress. Business consequence means production throughput has to be optimized to avoid unplanned machine downtime.

With this in mind, the plant has been utilizing a combination of offline and online monitoring solutions on their critical machinery for years. The expansion of the plant in recent years presented a new challenge for maintenance – loose meshing of the machine gears. It meant tremendous stress on the gears and resulted in accelerated wear and tear running into the risk of incorrect lubrication. Therefore, the maintenance management team turned to Schaeffler for a comprehensive solution.



Cooling tower fan

*The derivative acid is available in packaging sizes from 1 kg to 1,200 kg. It is used in different ways:

- as a food additive for bakeries, breweries, as an acidifier in confectionery products
- in pharmacy for skin irritations (warts) because of its corrosive and disinfecting effect
- for biodegradable packaging

Technical information on the units

Agitator

Speed	In: 1480 rpm, Out: 30 rpm
Capacity	55 kW
Gear ratio	~48.46

Agitator

Speed	In: 1455 rpm, Out: 158 rpm
Capacity	5.5 kW
Gear ratio	~9.20

Sludge Decanter

Bearing:	NU240-ECMA-C3
Speed	1400 RPM to 2100 rpm
Capacity	30 kW

Centrifugal Pumps

Speed	2890 -2940 rpm
Capacity	3 kW to 11 kW

Vertical Cooling Water Supply Pump

Speed	1440 rpm to 1488 rpm
Capacity	250 kW

Cooling Tower Fan

Speed	In: 1480 rpm, Out: 180 rpm
Capacity	75 kW
Gear ratio	~8.21

Thin Film Evaporator

Speed	In: 1470 rpm, Out: 28 rpm
Capacity	37 kW
Gear ratio	~52.98

Compressor chiller

Speed	2900 rpm
Capacity	151 kW and 168.7 kW

What Schaeffler has to offer ...

Solution

Working together with the customer and understanding the demanding needs of the application, Schaeffler's experts recommended OPTIME, an easily scalable wireless condition monitoring solution consisting of wireless sensors, a gateway and digital services based on proprietary Schaeffler algorithms.

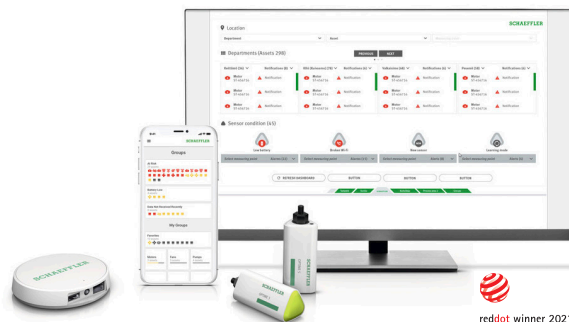
50 OPTIME sensors have been installed on pumps, cooling tower fans, agitators (gearboxes), and refrigeration compressors. With this solution, the majority of the machines are continuously monitored online.

What's special

OPTIME has detected a total of 17 faults within one year of usage, including 5 serious ones. Coupled with Schaeffler's wired condition monitoring solution, SmartCheck, and offline measuring system, a comprehensive monitoring has been implemented in the plant.

After the OPTIME solution was implemented, costly unplanned downtime of machines was easily prevented.

Maintenance manager of the biochemical plant



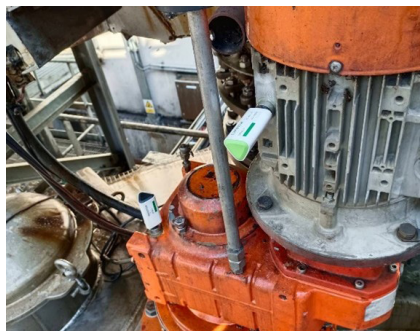
Schaeffler OPTIME wins the Red Dot Award 2021 in two categories

OPTIME sensor specifications

Vibration bandwidth	OPTIME-3: 2 Hz – 3 kHz OPTIME-5: 2 Hz – 5 kHz
Calculated parameters	7
Sensor commissioning	NFC (Near Field Communication)
Communication	Wirepas Mesh (2.4GHz ISM Band)
Measurement cycle	Parameters: every 4 h Time waveform: every 24 h

OPTIME: OPTIME sensors monitor the machinery and equipment at the customer's site. The gateway receives the data from the sensors and transfers it to the Schaeffler cloud. OPTIME automatically detects problems, issues the appropriate alarms and provides information on the possible cause of the problem.

Expert condition monitoring on the part of the customer is not required since this knowledge is already fully integrated into OPTIME in the form of Schaeffler know-how.



OPTIME sensors on an agitator gearbox



OPTIME sensors on a chiller compressor



OPTIME sensors on pumps

What our customer says ...



We have been using condition monitoring solutions from Schaeffler for years. Each solution provides us with the protection we need for our machines. SmartCheck is used for individual critical units and has saved us from some unplanned downtime. OPTIME enables us to implement comprehensive monitoring in our plant.

We are completely satisfied with the Schaeffler solutions and service.

Application engineer
of the biochemical plant

Customer

The company is the global market leader and a leading supplier of emulsifiers, functional enzyme blends, minerals, vitamins and algae ingredients. With 100 years of experience in fermentation, the company provides sustainable solutions for the food industry, home and personal care, pet food, pharmaceuticals, medical devices and bioplastics and biochemicals. The company employed around 2,500 people at the end of 2021.

Why Schaeffler?

- Technical expertise
- Friendly and knowledgeable customer service
- Quick and easy installation

Why this specific solution?

- Precise machine condition data
- Easy, intuitive operation
- Automated learning mode

OPTIME is 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 engineers over the entire lifetime of a machine.

www.schaeffler.de/en/lifetime-solutions

