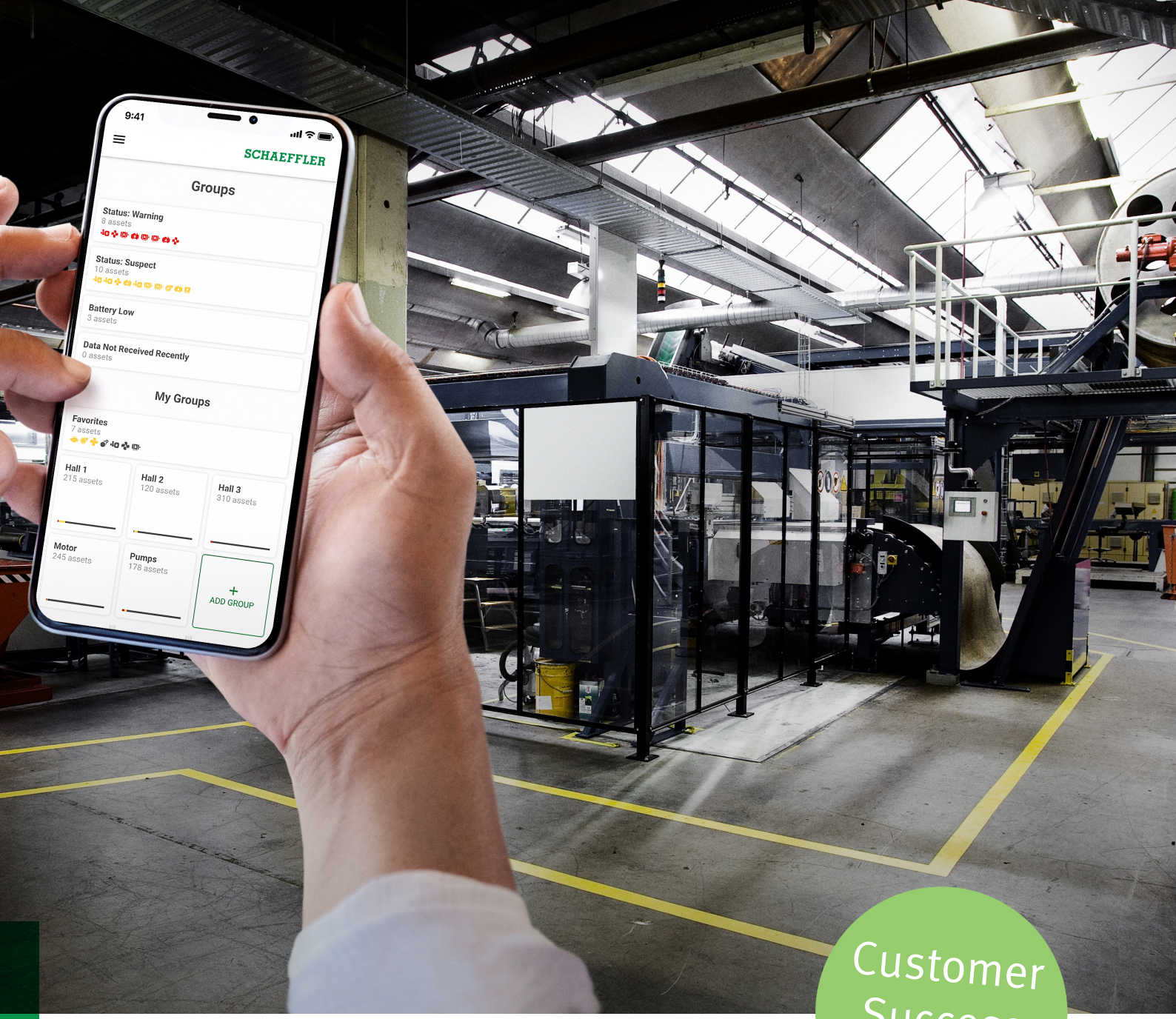


Customer Success Stories

We pioneer motion

Defect detection with OPTIME

Reliable machine monitoring around the clock

Launch of the monitoring solution in Europe: July 1, 2020
Since then, thousands of OPTIME sensors have been monitoring various machines in numerous applications and industries.
Immediately after installation, OPTIME automatically detects failures and issues an alarm message. This prevents cost-effective downtime without the need for manual intervention.

Find out how the OPTIME sensors perform in practice on the following pages.

Schaeffler OPTIME wins
– the Red Dot Design Award 2021
– Industry 4.0 Innovation Award 2020

www.schaeffler.de/en/success-stories

SCHAEFFLER

Monitoring of pumps

OPTIME sensor on a pump

Sector
Pulp and paper processing
Application
Pump (cutting line)
Criticality
A (highest level)
Potential impact of the failure
System shutdown for part processes with considerable loss of production

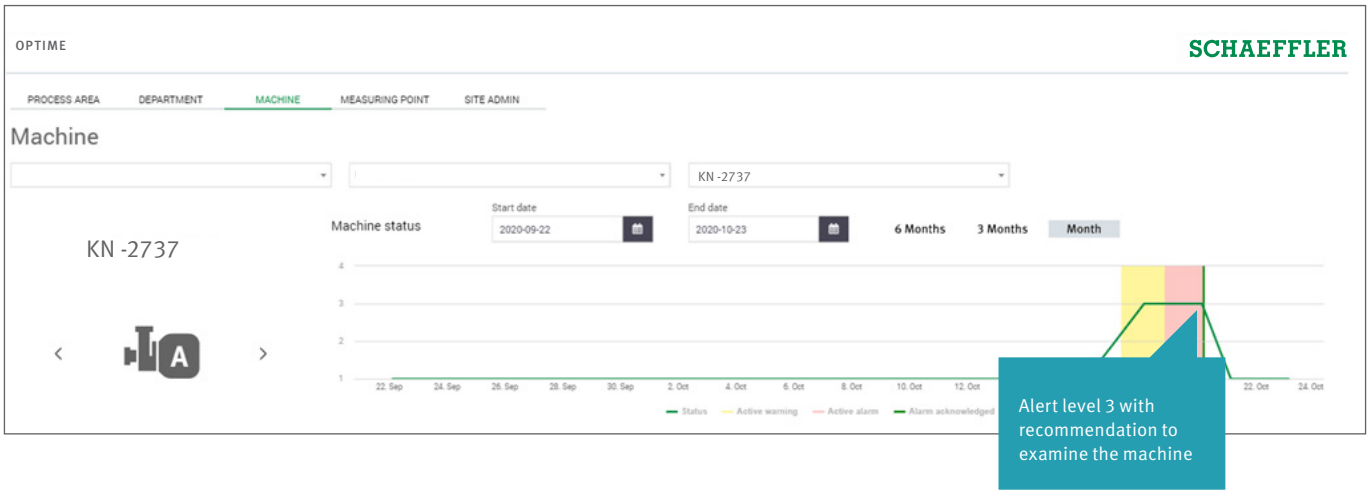
What OPTIME reports ...

After several months of normal operation, the sensors detected a start-up error. The machine status changed from *Normal (*level 1*) to *Warning* (level 3*) within two days.

What the customer reports back ...

The customer's maintenance team confirmed the failure and immediately replaced the pump. Had the milling cutter failed because of the defective pump, the production line would have to be stopped, leading to considerable material waste.

*** Warnlevel**
1 = normal 2 = suspect 3 = warning 4 = severe



Monitoring of a motor

OPTIME sensors on motors

Additional information

Manual motor checks are rather rare in such cases, as the motor for the circulation pump is located in excess of 2-3 meters.

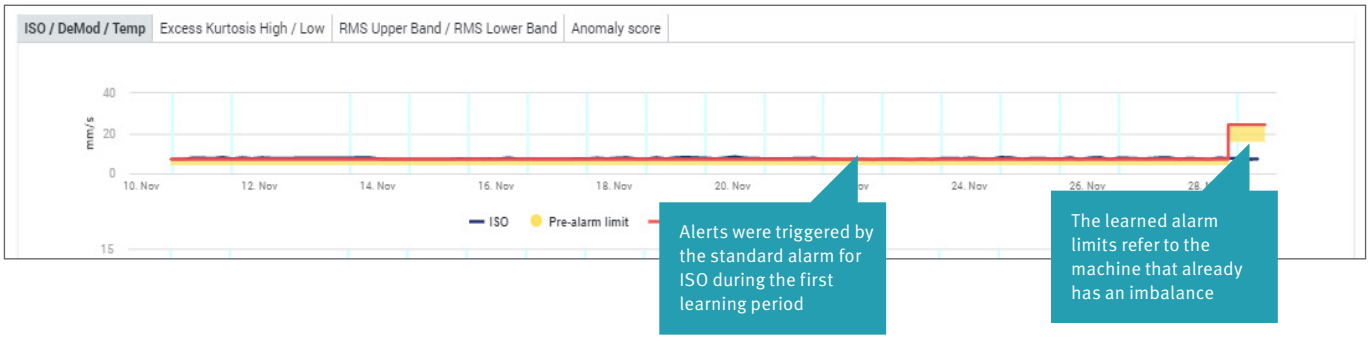
Sector
Industrial (production step: heat treatment)
Application
Motor (hardening furnace)
Criticality
A (highest level)
Potential impact of the failure
Production suspended for part processes with considerable loss of production

What OPTIME reports ...

The sensors triggered several alarms and indicated that the ISO level had clearly exceeded the main limit value in the motor. A manual check revealed that the motor already had an imbalance, and probably bearing damage before the sensor was installed.

What the customer reports back ...

The customer's maintenance team confirmed the failure. The motor was replaced. Had the defect not been recognized in time, part of the production line would have failed.



Monitoring of fans

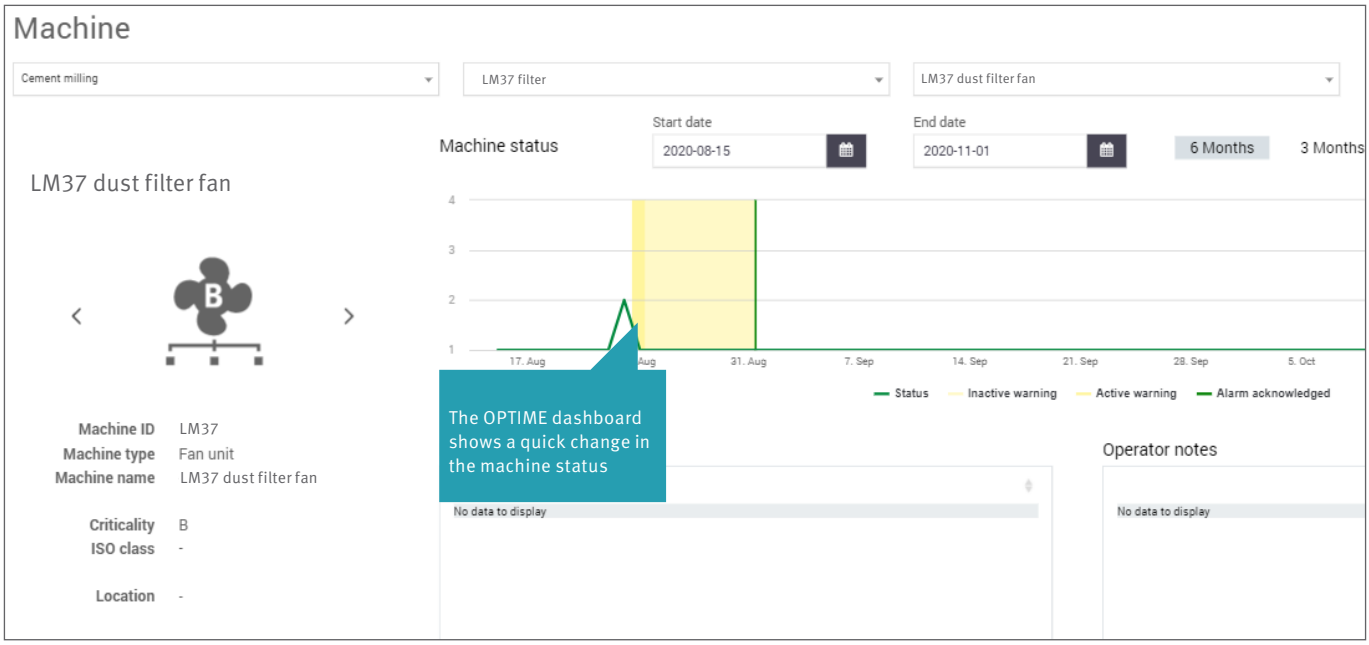
Fan system

Sector
Cement
Application
Dirt filter
Criticality
B (second highest level)
Potential impact of the failure
Partial suspension of production

What OPTIME reports ...
OPTIME triggered a change in the machine status to *Suspicious* (level 2) and provided several individual alarms for trends.

What the customer reports back ...
The customer‘s maintenance team confirmed the accumulation of dirt on the blades of the dust filter fan and performed the cleaning process several times based on the measured vibration amplitudes in OPTIME.

*** Warnlevel**
1 = normal 2 = suspect 3 = warning 4 = severe



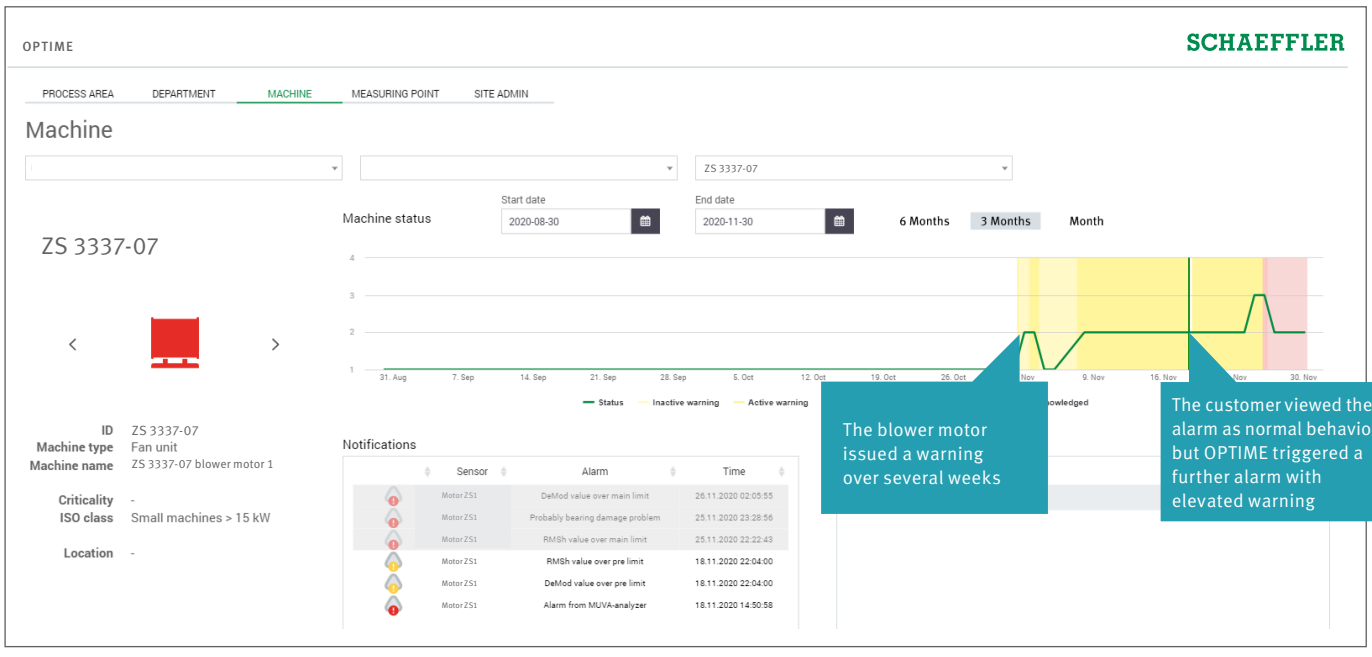
Monitoring of blower motors

Pulp process with 133 machines and 200 OPTIME sensors

Sector
Pulp and paper processing
Application
Blower motors
Criticality
A (highest level)
Potential impact of the failure
Production suspended for the entire dryer section

What OPTIME reports ...
OPTIME sensors on one of the blower motors report discrepancies, which could be attributed to bearing damage, over several weeks.

What the customer reports back ...
The customer's maintenance team confirmed that bearing damage was indeed involved.
The defective bearing was immediately replaced.



Monitoring of pumps

Filtration pump

Sector
Pulp and paper processing
Application
Filtration pump in the washing press
Criticality
B (second highest level)
Potential impact of the failure
Partial suspension of production

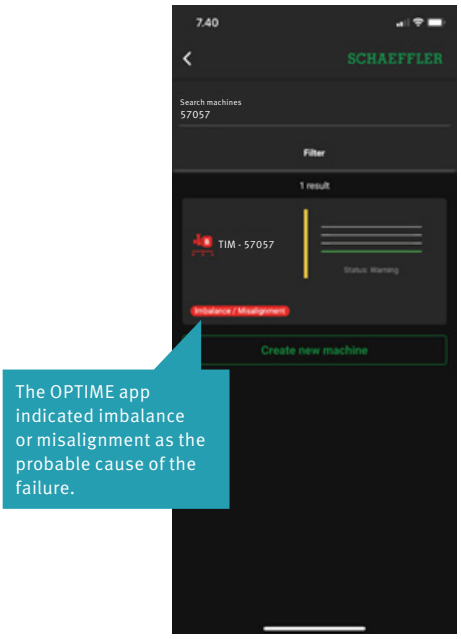
What OPTIME reports ...

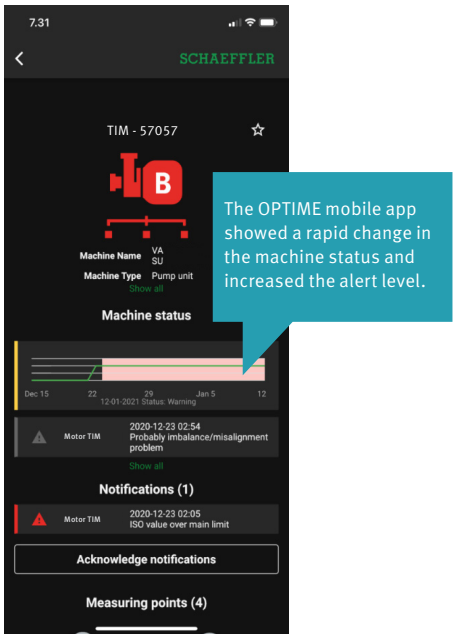
After the filtration pump failed unexpectedly in the customer‘s wash press, OPTIME increased the machine status warning to level 3*. Imbalance or a misalignment was considered the probable cause.

What the customer reports back ...

The customer’s maintenance team confirmed the total failure of the clutch and replaced the entire unit.

*** Warnlevel**
1 = normal 2 = suspect 3 = warning 4 = severe





Monitoring of vacuum pump

Vacuum pump

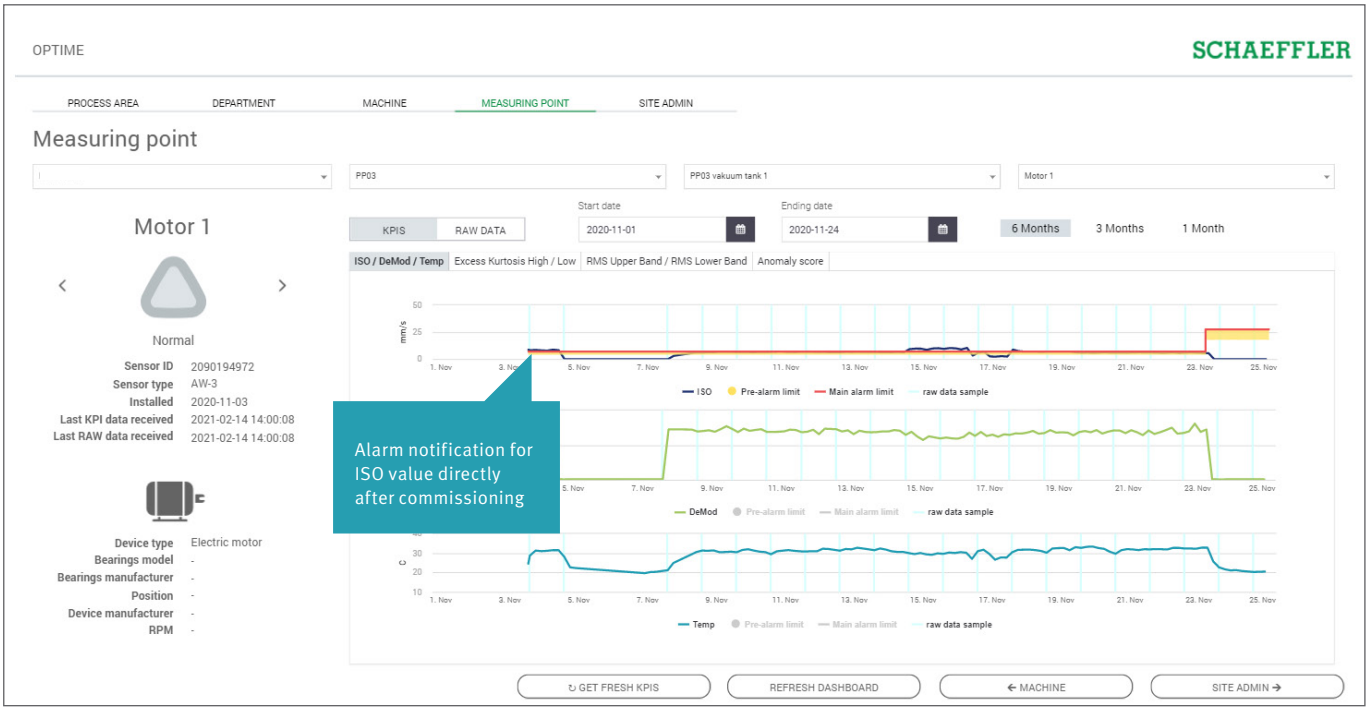
Sector
Raw materials
Application
Vacuum pump
Criticality
B (second highest level)
Potential impact of the failure
Partial suspension of production

What OPTIME reports ...

Immediately after the installation of OPTIME, the sensor on the vacuum pump motor issued an alarm notification concerning the measurement of the ISO vibration intensity. The sensor achieved this despite still operating in its learning phase.

What the customer reports back ...

The customer's maintenance team confirmed during the next planned shutdown, that the motor had indeed suffered bearing damage.



Schaeffler OPTIME

OPTIME - Plug. Play. Predict.

High-scale monitoring at the lowest cost

OPTIME from Schaeffler allows for comprehensive condition monitoring that is both easy and affordable. Thanks to its simple plug & play installation, OPTIME allows you to start monitoring hundreds of rotating machines in just a few hours.

Benefits

- Easy installation of OPTIME solution.
- Greater safety for employees avoiding hard-to-reach areas
- machinery is no longer required with the digital service.
- Wireless solution
- More efficient planning of maintenance measures, staff and spare parts supply.
- Unplanned downtimes are reduced to a minimum.

Performance data for the OPTIME sensors 3 and 5

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 (2.4 GHz ISM band)
Measurement cycle	Parameters: every 4 h Time signal: every 24 h

OPTIME wins the Red Dot Design Award 2021

With its innovative OPTIME condition monitoring solution, Schaeffler ranks among the list of well-known companies that have won the „Red Dot Award“.

In the “Smart Product” and “Industrial Design” categories, the jury chose OPTIME to receive the award, confirming the outstanding product design, functional composition and innovativeness of Schaeffler’s digital service solution.

OPTIME wins the Industry 4.0 Innovation Award 2020

The perfect implementation for Schaeffler‘s innovative condition-monitoring solution OPTIME was confirmed with the winning of the „Industry 4.0 Innovation Award“.

This was the fifth time that the award was presented by VDE Verlag in collaboration with the German Electrical and Electronic Manufacturers’ Association (ZVEI) and the Industry 4.0 Standardization Council.

Success Story 0159, 2021-04, Contact: optime@schaeffler.com, Phone +49 2407914966