



Even well-serviced extraction systems can surprise with downtime issues. Keller Lufttechnik recommends PREMOS as a complete solution to protect against unscheduled equipment downtimes.

Downtime risk close to zero with the use of Predictive Monitoring

With Predictive Monitoring, an automatic remote monitoring concept, Keller Lufttechnik's specialists continuously supervise the status of the extraction systems of participating customers. The sensors trigger an alarm if worn out or polluted components threaten the functioning of a system. Unscheduled machinery downtime? This expensive scenario is a thing of the past for users of our Predictive Monitoring System named PREMOS. Everyone can participate: Upgrading existing filtration systems is easy with the installation of relevant hardware. Keller Lufttechnik can directly install this service in new systems upon request.

Everyone is discussing the Internet of Things (IoT), "intelligent machines" that provide interesting data about operation conditions. A well-known example is the refrigerator which automatically orders milk or butter from the corner store if these products run out. "Nobody needs it", is often stated at convivial gatherings. However, there are already meaningful technologies available. They assist companies in operating more productively. As the specialist for clean air, Keller Lufttechnik in D-Kirchheim/Teck (near Stuttgart), can provide such proof.

Suitable for all types of filtration systems

The After Sales Service of Keller Lufttechnik offers, additionally, a predictive monitoring service - a condition monitoring for extraction systems. This technology can be easily retrofitted to operate on all types of extraction systems, whether dry, wet, coolant or oil mist filtration.

Sensors detect important operating parameters

"A data box and different sensors only are required," explains Matthias Herrmann, Product Manager of After-Sales/Service at Keller Lufttechnik. Installed on various

parts of a system, the sensors can detect, among other issues, the resistance of the main filter and secondary filter stages, fan vibrations, the air flow, compressed air consumption or power consumption. The data measured by the sensors is relayed via mobile network to a web-based data platform. Data collection and transfer is independent of the machine's main control, which makes the system extremely safe to utilize.

Alarm signal if the limit value is approached

"The data platform includes the limit values for different parameters for any systems that are being monitored. If the measured values approach the set limit values, an alarm is sent to us", says Matthias Herrmann. "Our specialists analyze the situation and contact the customer with problem solutions and maintenance recommendations. The operator can quickly adopt suitable measures, preventing an unscheduled system downtime." Customers using this service can also obtain access to the IoT platform and can check the values at any time by themselves. >

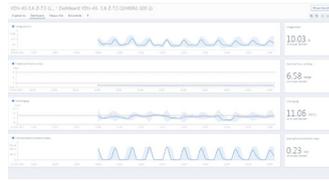


OPERATOR



Data logging

Logging of important measurement values by means of sensors and a data box



Data management by IoT Platform and visualization by web browser



KELLER



Initial diagnosis

- Analysis of the reported alarms
- Preparation of possible solutions
- Preparation of maintenance recommendations

Sensors detect important operating parameters that are permanently monitored via a web-based data platform. The aim is to warn customers in advance before issues arise at their systems.



Contacting the operator

Predictive Monitoring – Customers benefit

The advantages of Predictive Monitoring for customers of Keller Lufttechnik are evident: they receive advance notification when issues are imminent. Necessary repair /maintenance /cleaning work can be planned so that they are scheduled for a period when the system is not operating. Unscheduled downtimes of dust collection systems are now becoming a thing of the past. "Our customers can purchase spare parts only as required, and so can reduce their inventory," says Matthias Hauser. "Our service technicians know in advance what to expect when they visit customers for regular system inspections, bringing with them any anticipated spare parts. No extra service trips are necessary."

All achievements advance further product development

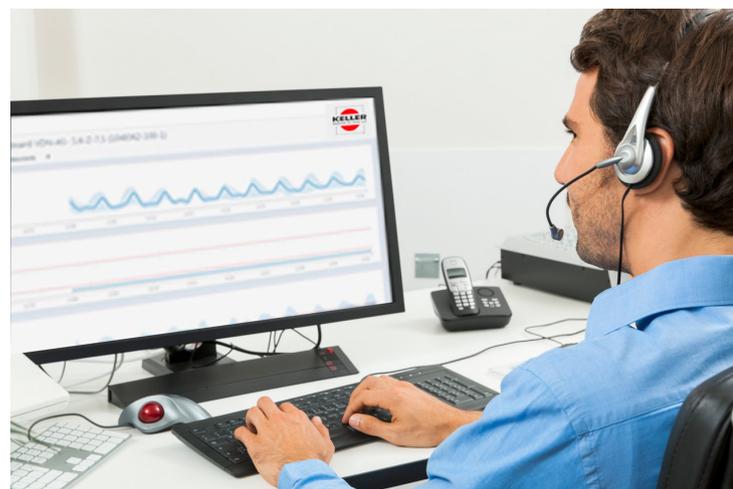
Matthias Herrmann notes an additional long-term advantage for all participants. "With Predictive Monitoring we gather more valuable insights into how well Keller Lufttechnik's filtration systems function with daily use, which further benefits future product development. Down the road, we will be able to offer our customers customizable systems and more detailed solutions." <

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„These multiple advantages are summed up in noticeable cost reductions and productivity gains for our Predictive-Monitoring customers.“



PREMOS customers receive advance notification when issues are imminent. Necessary repair /maintenance /cleaning work can be planned so that they are scheduled during a period when the system is shut down.

Schweizer Group: „No more downtimes – Predictive Monitoring pays off.“

Martin Landwehr is head of maintenance at Schweizer Group, aluminum and die-casting specialist at D-Hattenhofen, located between Stuttgart and Ulm. The company has been using the Predictive Monitoring Service by Keller Lufttechnik for more than a year. In an interview with LUFTREIN editors, Martin Landwehr related his experiences.

LUFTREIN: Mr Landwehr, what is Schweizer Group about? What do they offer?

Martin Landwehr: Schweizer Group specializes in aluminum and magnesium die-casting and is a supplier of series parts for the automotive industry. We employ approx. 1000 people at four sites in Germany, and one each in the Czech Republic, Turkey and China. Here at the headquarter in D-Hattenhofen about 400 people work in our foundry, in CNC processing, and administration of the holding company. We manufacture approx. 12000 aluminum die-cast parts daily in D-Hattenhofen by 10 die-casting centers. The majority of our production is cylinder head covers.

LUFTREIN: Where do you use extraction systems?

Martin Landwehr: There is only one extraction system, a wet scrubber. It controls clean air at the shot blasting plant. All aluminum die-cast parts pass through this shot blasting plant. We intensively use the system. During the week it operates continuously, and sometimes on weekends, as well. This means that it could become our "bottleneck" machine, and its reliability is of vital importance to us. In the event of a breakdown, no parts will exit this stage of production.

LUFTREIN: What is the role of the extraction system?

Martin Landwehr: During operation, the system is equally important as the shot blasting plant itself. If the extraction system does not function, we cannot operate the blasting plant. The only alternative would be to let the parts be shot-blasted by an outside provider. This would result in a significant loss of time and would increase the price by 50%. During any shift in when a system shut down occurs, we lose approx. 3000 Euro. This has actually happened in the past. With worse luck, the problem occurred in the evening. Then, the system was down for 2 shifts until we could resolve the problem. If the ultimate reason for the shutdown was merely a blocked nozzle, I found that highly frustrating.

LUFTREIN: You have been using the Predictive Monitoring Service PREMOS of Keller Lufttechnik for one year now, and have allowed your extraction system to be monitored remotely. What effect did this service have on your operation?

Martin Landwehr: The extraction system has not failed since then. Keller Lufttechnik now monitors any important operating parameters and provides us with an alarm when necessary. The messages display greater urgency as individual measurement values approach the "red zone", which is very helpful.

LUFTREIN: Why are there periodic "alarms" on your extraction systems, and what measures do you take then?

Martin Landwehr: Keller Lufttechnik informs us not only about critical measurement values, their specialists always advise us on what actions to undertake immediately. There are two issues that occur repeatedly: The nozzle of the wet scrubber is blocked and requires cleaning, or the fan has an imbalance because of contamination. We noticed that conscientiousness pays off when we perform a daily minor cleaning and a major cleaning every 14 days. In the meantime, we have an idea of how long the extraction system can continue to operate after an initial alarm. Say the alarm reaches us on a Thursday, and a major cleaning is scheduled for Saturday, a cleaning only is sufficient. This means that we have adequate time to plan our cleaning and maintenance activities so that there are no additional downtimes. This is beneficial for our productivity.

LUFTREIN: Would you recommend PREMOS to other companies?

Martin Landwehr: Yes, I would. It provides a tangible extra value at a fair cost.

LUFTREIN: Thank you very much for this interesting interview, Mr. Landwehr.



For Martin Landwehr, Maintenance Manager at Schweizer Group Hattenhofen, an aluminum die-casting specialist, the system of proactive remote monitoring has already paid off. Since PREMOS has been in use, their separator has not experienced any unscheduled downtimes.