

Wood Processing

Optimizing Dust Monitoring — A bold test of the PM 100 PRO pays off

“We intentionally slit a bag as an experiment, and the system detected the increased emissions immediately. I was pleased with the sensitivity.”

Introduction

The wood processing industry faces significant health and safety challenges due to wood dust exposure, which is classified as a Group 1 human carcinogen by the International Agency for Research on Cancer (IARC). Prolonged exposure is linked to nasal and sinonasal cancers, making effective dust collection critical for worker protection. Globally, regulations continue to tighten exposure limits, reinforcing the need for high-performance filtration solutions.

With growing demand for sustainable building materials, wood remains a preferred renewable resource, making effective dust collection and monitoring systems essential for both compliance and worker safety. To maintain a safe and efficient facility, a wood manufacturer invested in high-performance filter bags for superior dust capture, reduced emissions, and longer service life. Paired with an intelligent monitoring system, this solution protects their investment by detecting harmful particulate buildup before it causes damage, supporting uninterrupted operations and long-term sustainability.



Challenge

A leading cabinet door manufacturer sought a reliable solution to monitor particulate emissions and detect filter bag failures in their dust collection system.

The company operates two types of baghouses:

- A square filter house with bags cleaned by air blasts
- A round filter house cleaned by a rotating air knife

Their primary goals included:

- Meeting dust exposure regulations
- Detecting filter bag failures promptly to prevent excessive emissions
- Optimizing maintenance schedules to reduce operational costs

Solution

To enhance dust monitoring, the company installed the PM 100 PRO Bag Leak Detection System, which utilizes charge induction non-contact charge induction technology. Unlike traditional triboelectric units and opacity monitors that suffer from particulate build-up on sensing elements, the PM 100 PRO remains unaffected by contamination and does not require frequent sensor rod cleaning. This feature significantly improves reliability and maintenance efficiency.

Implementation & Results

Four months after installation, the PM 100 PRO demonstrated its effectiveness in monitoring emissions across both filter houses:

- **Square Filter House:** The system provided clear visibility of air blast cleaning cycles. In the event of a ruptured bag, the monitoring system would detect the issue immediately.
- **Round Filter House:** While the cleaning mechanism was more subtle, the system successfully detected a controlled experiment where one bag was intentionally slit by two inches. The escaping dust was recorded as an increased average and spike each time the rotating arm passed over the damaged bag, highlighting the PM 100 PRO's sensitivity.
- **Predictive Maintenance:** The system is used to track filter performance over time, helping determine optimal filter bag replacement schedules and improving operational efficiency.



In wood manufacturing, where dust control can mean the difference between a safe workplace and serious hazards. Auburn provides the accuracy and reliability needed to protect both workers and equipment.



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Conclusion

By implementing the PM 100 PRO Bag Leak Detection System, this cabinet door manufacturer transformed their dust monitoring process in a way they never imagined possible. What was once a tedious and uncertain task is now seamless and precise, providing real-time insights with unmatched accuracy. No longer do they have to second-guess their filter performance or worry about unnoticed bag failures—issues that once posed operational risks and compliance concerns are now effortlessly managed. The PM 100 PRO has not only improved their ability to detect even the smallest leaks but has also granted them unprecedented peace of mind. With this small but powerful change, their operations run smoother, downtime is minimized, and maintenance is smarter, making their work environment safer and more efficient than ever before. The system's advanced sensing technology provides reliable and accurate monitoring without the frequent maintenance issues associated with traditional monitoring systems.

Featured Products

Auburn offers multi-point and single-point particulate monitoring solutions to fit diverse needs. The multi-point system connects multiple sensors to a single control unit for comprehensive baghouse and stack monitoring, while the single-point, in-situ monitor provides real-time dust measurement for individual stacks or process applications. Both use induction-sensing technology for reliable emissions monitoring, bag leak detection, and system health diagnostics.



PM 1 PRO

Versatile single-point instrument designed for continuous particulate monitoring, delivering reliable performance across industries.



PM 100 PRO

Multi-point particulate monitoring system designed for both baghouse and stack applications, delivering dependable performance across industries.