

Workplace Dust Monitoring in Metallurgical Workshops

Real-time ambient dust trends for better extraction control and workplace conditions



Continuous ambient dust monitoring helps plant operators see changes in workshop dust levels, assess extraction-system performance and respond to abnormal conditions before they become persistent problems.



The Challenge

A global metallurgical company operated dozens of workshops at its main European plant. Each workshop used a dust extraction system to remove airborne dust and help protect both employees and equipment.

The plant had been using opacity-based dust monitors, but workshop conditions led to frequent maintenance and regular false positives. Because many monitors were installed in difficult-to-access locations, the maintenance burden increased without providing the reliable dust-trend information the plant needed.



The Solution

During a three-month trial, the company installed two Sintrol Dumo ambient dust monitors alongside its existing systems. Auto Setup was used during commissioning, after which two independent alarm relays were set at four and ten times the normal dust level.

A 4-20 mA output provided continuous trend information, enabling operators to identify dust spikes and changes associated with workshop cleaning cycles and ongoing production.



Results

From a two-monitor trial to every workshop at the plant.

During the three-month trial, the Dumo monitors did not require cleaning or adjustment after the initial setup. Following the trial, the plant installed a Dumo in each workshop and began extending the solution to other global sites.

- ➔ More reliable visibility into workplace dust trends
- ➔ Earlier indication of abnormal dust conditions
- ➔ Lower maintenance burden than the previous opacity-based system
- ➔ Better information for evaluating extraction and cleaning performance

Today's Sintrol solution

Workplace and ambient dust monitoring:

DumoPro is Sintrol's current continuous workplace dust monitor for industrial environments. It provides 24/7 real-time trend monitoring of total suspended particles (TSP), with Auto Setup, two independent alarm relays, an isolated 4–20 mA output and RS-485 Modbus RTU connectivity.

Hazardous areas:

DumoPro Ex is ATEX-, IECEx- and US/CAN hazardous-location approved for ambient-air use in Zones 20, 21 and 22, making it suitable where combustible dust atmospheres may be present.

Configuration and diagnostics:

DumoPro includes automatic Zero- and Span-checks and can be configured with Sintrol DustTool 2. Its relay, 4–20 mA and Modbus outputs allow dust trends and alarms to be integrated into plant monitoring and control systems.

Centralized monitoring and reporting:

For sites with multiple workplace dust monitors, **Sintrol DustCloud** can bring measurement trends, device status and alerts from supported Sintrol monitors into one cloud-based environment. This supports remote oversight and faster response to abnormal dust conditions across multiple workshops or sites.

How it works

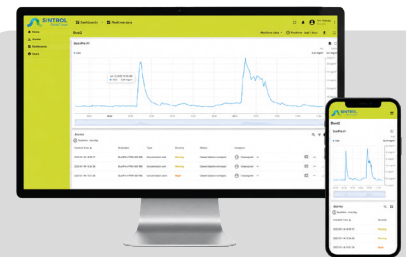
DumoPro uses Sintrol's Inductive Electrification technology to monitor total suspended particles in ambient air. Signal processing and filtration convert the sensor response into a continuous dust trend that can be used for real-time monitoring, alarms and follow-up of changing workshop conditions.

Product portfolio for the case



DumoPro

Workplace and ambient air dust monitoring filter



DustCloud

Centralized access to trends and alerts