

Application Notes – Emissions Monitoring Textile Industry

At Sintrol, we are committed to implementing solutions for our customer's problems. Our products are based on our unique Inductive Electrification technology and developed using a flexible modular based platform that allows us to tailor our products for the customer. While many dust monitoring systems are tailored towards the government regulated emissions limits, there are intermediary measurement points that can be just as critical to the costs and regulatory compliance of the end user. Managing the filtration systems is not only good for emissions, but also a strong indicator to help with maintenance and overall plant costs.

Objective

Accurately measure the dust concentrations from the stack emissions in order to report figures to the government authorities.

Problem

An Indian Textile plant had been asked to measure and report its dust emissions from the stack to the regulators. In searching for a solution, they discovered that all of the neighboring plants had been using opacity monitors for this, but none of them worked very well. Due to moisture level changes caused by a change in coal property, the output of the dust measurement would not be consistent. Additionally, the monitor needed to be TÜV certified for official stack measurements.

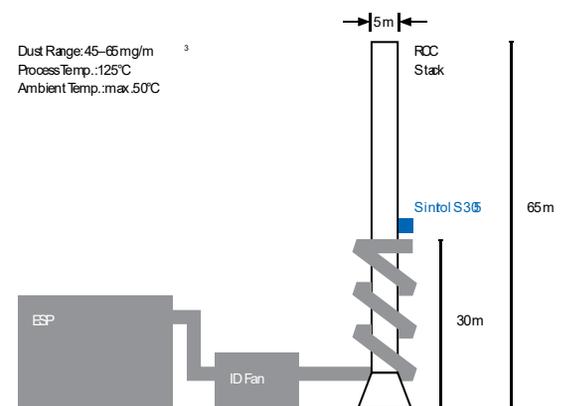
Solution

The company installed a custom made Sintrol S305 monitor in the stack as shown in the diagram above. Due to the moisture in the process, we provided a customized Teflon sleeve for the probe. Additionally, the customer installed the monitor using a slight decline in order to keep the moisture flowing away from the electronics. The main competition faced in this application was with a major opacity manufacturer, but due to our lower principal cost as well as the minimal ongoing maintenance needed, we were able to secure the purchase order with the customer. With the success of this application, the business directly led to two other installations with another textile company in India.

Principle of Operation

Sintrol dust monitors are based on a unique Inductive Electrification technology. The measurement is based on particles interacting with an isolated probe mounted into the duct or stack. When moving particles pass nearby or hit the probe a signal is induced. This signal is then processed through a series of Sintrol's advanced algorithms to filter out the noise and provide the most accurate dust measurement output.

Classic triboelectric technology is based on the DC signal, which is caused by particles making contact with the sensor to transfer charges. Compared to DC based measurements, the Inductive Electrification technology is more sensitive and minimizes the influence of sensor contamination, temperature drift and velocity changes. By using the Inductive Electrification technology, it is possible to reach dust concentration measurement thresholds as low as 0.01 mg/m³.



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