

Application Notes – Animal Food Manufacturing

This producer is one of the key European groups in the animal feed and meat sector and has seven plants across Italy ensuring a capillary product distribution. The first Sintrol dust monitors were installed end of 2014 in the Verona production plant by our certified long term distribution and service partner Tecnova HT from Milano. The company was obliged to run a sedimentation chamber with an area of about 200m² after their bag houses, where the dust could settle down in case of a filter breakage. The goal was to free this area for production purposes and get an early hold on any baghouse leakage in order to avoid production stops and fines from the government.

Therefore, they were looking for a reliable solution to detect a leakage in their bag houses. The dust level had to be evaluated in an ATEX Zone 20 inside the duct and Zone 22 outside the duct.

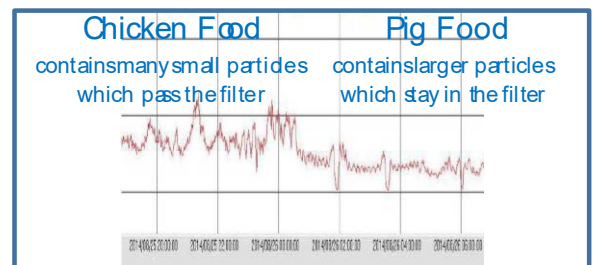
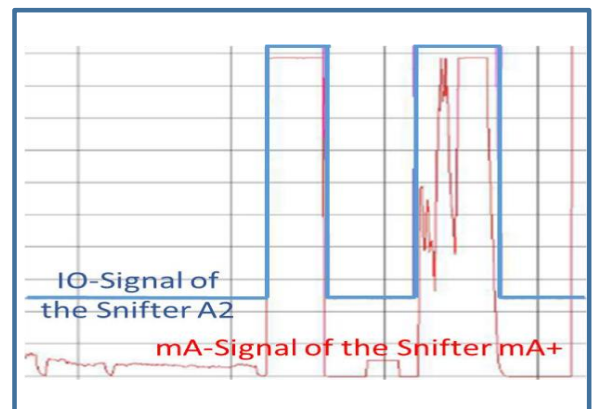
About 80% of the emitted dusts are dry and about 20% contain some moisture, depending on the produced product. The temperature at the measuring point is about ambient temperature. The dust level must be maintained to be less than 10 mg/m³.

In order to be sure to choose the right instrument a two months trial period with one Snifter mA+ and one Snifter A2 was initiated at the end of 2014. The two sensors were installed in parallel. During the test the failure of a braking bag was forced and both instruments reacted well and generated the same result and alarm signal.

The most amazing result was that during a normal working of process, the Snifter mA model was able to identify when the factory changed the type of produced food. The grain size of the dust changed in correspondence of different products and the Instrument was able to identify this even at intact filters!

As a result of the successful test, Veronesi bought in the beginning of 2015 additionally 21 Snifter A2 and one Snifter mA+.

Personal comment of the End user: We had received a better signal than we expected.



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Country:	Italy
Region/Address:	Verona
Industry:	Food Industry
Industry Section:	Animal fodder manufacturer
Application:	Filter Leak Detection
Application Title:	Broken bag detection in an ATEX Zone for an fodder manufacturer
Why are they measuring dust?	<ol style="list-style-type: none"> 1. Because they must stop the process if there is any environmental problem trough dust emission. Very heavy fines would be the consequence. 2. Because they can save space and money just to recovery the big chamber that now is used like a lung capacity to prevent dust emission.
Where in the process to measure?	After bag houses
Number of required instruments	2 Snifter mA+ and 21 Snifter A2
Law or Norm to be fulfilled?	Local authority requires to maintain dust emission less than 10mg/m3
Data Logging Software:	Snifters are connected by analogue signal to local DCS system
Analogue signals:	21pc. Snifter ON/OFF and 2pc. With mA-output
Local Display/User Interface:	No, not required
Measuring Location:	Inside, Stack
Inner diameter of stack or duct:	Depend of plant... from 600 to 1000 mm
Wall thickness of stack or pipe:	2mm
Insulation thickness (if any):	No insulation
What is the wall made of?	Steel
Special technical challenges:	To get a FAST recognition of broken bag filter
ATEX Requirements:	Atex 20 inside the pipe and Atex 22 outside
In which gas need to be measured?	Air
Is there any mist in the gas (compensating conditions)?	No
Temperature (°C):	Ambient conditions
Pressure (kPa):	100
Air velocity (m/s):	>10
Dust concentration range (mg/m3):	<10
Relative humidity at measuring point (%):	20
Ambient conditions:	Normal
Temperature (°C):	35
Power Supply Voltage (VDC/VAC):	24VDC
Power Supply Frequency (Hz):	50
Competitors:	Opacity monitors
Why has Sintrol been chosen?	Available to send instruments for test and a competitive price.
Who did the installation?	Instruments were installed by Tecnova Service
Did the customer achieve their goals?	Yes

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Est 2003



Measure . Prevent . Protect . Control

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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