

PROCESS

Early recognition of dangerous dust concentration – Measurement of dust content in exhaust air

APPLICATION

A confectionery manufacturer refines dairy products. The dust-laden exhaust air produced during the manufacturing process is cleaned in the extraction system by industrial filter systems. When the limit value is reached, a dangerous dust atmosphere is to be prevented by early warning. A calibratable dust monitor shall continuously monitor the clean gas side according to the permitted dust concentration of max. 20 mg/m³.

PROCESS DATA

Customer:	Confectionery manufacturer (Germany)
Product:	Waffle dust
Permitted	
Limit value:	20 mg/m ³
Installation:	Clean gas side of the exhaust duct of a dryer
Function:	Continuous measurement of the dust content in the exhaust air



SOLUTION

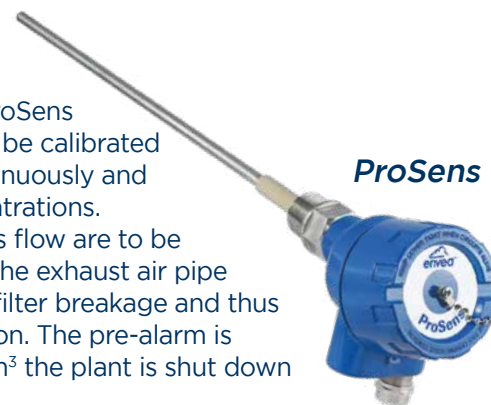
In the application described, the ATEX type approved ProSens was used to measure the dust content. The ProSens can be calibrated and monitors clean gas sides downstream of filters continuously and reliably for permitted or customer-specified dust concentrations. It is used in metallic ducts where dust particles in the gas flow are to be detected. In this application, the sensor was installed in the exhaust air pipe downstream of a filter unit in order to detect a possible filter breakage and thus prevent the occurrence of a dangerous dust concentration. The pre-alarm is 7 mg/m³, and when it reaches the limit value of 20 mg/m³ the plant is shut down for safety reasons.

Thanks to the Dosed-Reference-Method developed by ENVEA, the ProSens can be calibrated quickly and safely in the customer's system. For this, ENVEA only requires a representative sample of the customer's filter dust, the specification of the desired limit value with regard to the dust concentration and some process data, such as the volume flow.

With this information, a special dosing device can be set accordingly in advance, with which the technician then specifies the desired dust concentration to the sensor to be calibrated as a reference at the customer's site.

CUSTOMER BENEFITS

- Reliable and continuous dust measurement in mg/m³
- Safe compliance with permitted limit values (mg/m³)
- Early prevention of dangerous dust conditions
- Robust, durable, process-safe sensor technology (ProSens)
- Simple, fast and verifiable calibration (Dosed-Reference-Method)



Monitoring for Powder, Dust & Gas