CEMENT PLANT

Emission and Stack Gas Flow Monitoring

Kurz Thermal Insertion Mass Flow Meter systems provide proven accuracy and reliability in the most difficult of EPA Title IV applications with the ability to survive for long periods of time without maintenance

KURZ INSTRUMENTS INC.™

complex technology
MADE SIMPLE

Cement Plant Lime Kiln Stack Emission & Stack Gas Flow Monitoring

Benefits of the Kurz Solution

- *Easy Installation*
- *Satisfies EPA requirements for flow velocity correction*
- *Extremely Low Maintenance even Under Harsh Conditions*
- *Rugged and Accurate Dual Sting Sensors*
- *High Repeatability*
- *Process Temperatures up to 500°C*

Volumetric Stack Flow Monitoring

Discharge sources that are required to report volumetric flow of emissions as well as content are required by the Environmental Protection Agency (EPA) to use Continuous Emission Monitoring (CEM) Systems. Therefore, a flow monitoring system is an integral part of the CEM System. Cement Lime Kiln applications pose a number of challenges to obtaining these required flow measurements including hot, moist and dirty air flows.

Customer Application and Performance Issues

A large cement plant in the Northeast operated 3 Lime Kilns that require Stack CEM and Flow Monitoring. Two of the stacks contained ultrasonic flow monitoring systems and the third stack contained a Kurz Thermal Mass Flow Meter that was in service for more than 12 years. Although the K-Bar 24/Adam 155 System was operational, plant policies required that the flow monitoring system be updated to keep pace with new technology and to avoid unplanned shutdowns due to product obsolescence and parts support issues.

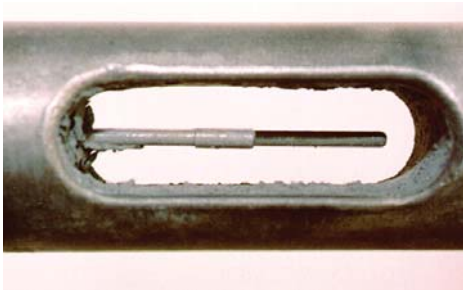
When evaluating the available technologies, the customer considered both ultrasonic and thermal mass technologies.

The Kurz Solution

The customer decided on the Kurz K-Bar 2000B/Adam 155 Thermal Mass Flow Metering system, which provided a number of key benefits over the ultrasonic options.

First, the particulate matter being emitted can build up on other technologies, requiring an Air Purge System to provide consistent and reliable data. One true advantage in this application is the ability of the Kurz technology to maintain sensor performance and survive for long periods of time without maintenance, even in extreme dirty and harsh environments.

Secondly, because of this harsh environment, the EPA specifies certain system requirements that will provide for velocity/flow correction if a sensor becomes non-operational. The Kurz Adam 155 Flow Computer and Transmitter controller contains firmware and software addressing this specific EPA requirement for stack emissions. The Adam 155's Flow Perfect™ Software is capable of recognizing problems from any of the individual velocity sensors or electronics and will "kick-out" the velocity reading in question. Once it eliminates the particular data, it applies a correction factor to the remaining sensors. This advanced technology provides the flow velocity correction mandated by the EPA.



The bottom photo shows the particulate matter that is common in Lime Kiln stacks and demonstrates how the Kurz K-Bar Sensor Window and Sensor Element remains clean and free of buildup. Thereby, Sensor/System performance is maintained and downtime for maintenance is virtually eliminated.

The Kurz Solution - Continued from Previous Page

The third benefit of the Kurz K-Bar 2000B/Adam 155 Thermal Mass Flow Metering System was the result of the installation cost. Since the Ultrasonic System required the sending and receiving devices be mounted at an angle across the stack flow area, a second platform would have been required to support this design requirement. Since the Kurz K-Bar 2000B solution did not require such a platform the cost savings on the installation was significant.

The final benefit of the Kurz system was the overall simplicity of the design, setup and programming, installation and proven reliability demonstrated by the 12 year old K-Bar 24 system.

Kurz Velocity Sensor Technology

The Kurz K-Bar 2000B contains Fast Dual Metal Clad™ mass flow sensors that use reference grade platinum RTD's with 0.25% repeatability. This, coupled with the extremely high signal-to-noise ratio of the constant temperature electronic circuitry, produces the most repeatable flow signal available in the industry. Our rugged and reliable FD "Dual Sting" flow sensor has repeatedly proven to work with little maintenance in "very dirty and hot" Combustion Air and Stack flow applications. Unlike many other devices, the Kurz devices will not plug or jam and can operate in low velocity high turndown applications while providing stable, reliable and repeatable velocity/flow measurements.

About Kurz Instruments

Kurz Instruments has maintained a reputation for designing and manufacturing Thermal Mass Flow Transmitters for industrial air and gas flow applications. Our engineers, product development specialists and management staff have developed products to operate in the harshest of environments. For more than 30 years, our entire team has provided solutions to our customers most demanding and difficult applications.

Kurz products are used in a wide variety of industrial applications including combustion air, aeration air and digester gas, nuclear power plants, pump protection, flare stack monitoring and compressed air, to name only a few.

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