

Monitoring Hot Materials on Flammable Conveyors for Fire Prevention

Many industrial processes require hot material or components to be conveyed from one plant location to another, sometimes over long distances. In some cases, sections of the conveyor are at high levels not easily reached by personnel.

Some examples are refractory and lime calcining, coke and ceramic sintering, and automated foundries. The conveyor belts are usually of rubberized fabric or nylon, both of which are flammable if heated to over 400°F.

Water sprays are used to cool the material before it reaches the rubber conveyor, but do not always adequately cool large masses. Failure to detect hot spots can cause a potential fire, resulting in plant damage and downtime costs totaling thousands of dollars.

The Application

Recently, Process Sensors has supplied a combination of Surveyor Cameras (models PSC-160) and IR Thermometers (models PSC-SSS) to a steel plant processing sintered coke. Sintered coke is a combination of coke fines (Breeze) and other materials, and is preferred over blast furnace coke because of its consistency, lower cost, higher combustion yield and potentially lower pollution.

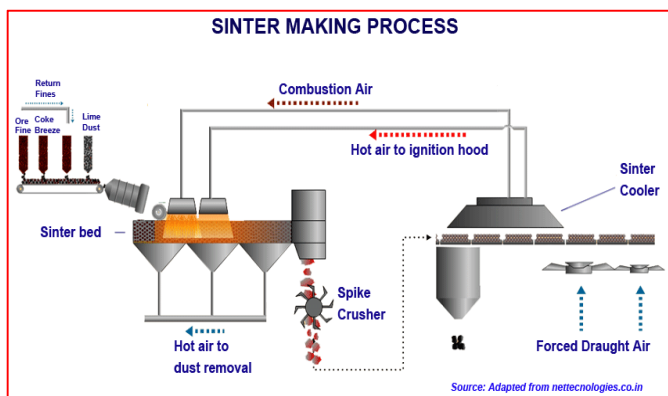
Instrumentation Package

Conventional IR Thermometers with wide fields of view have been used successfully to detect hot spots on conveyors providing that the material flow is confined to the sensor's cone of vision or narrow FOV.

Additionally, Process Sensors Surveyor Series cameras with user selectable lenses are capable of observing larger areas, utilizing thousands of individual detector elements for measuring smaller spots within the overall area for hot-spot detection. A visual operator aid comes in the form of a touch screen PC monitor.



Process Sensors Surveyor Camera Monitoring sintered coke on conveyor. (Arcelor Mittal - Gary Indiana)



For user convenience, Process Sensors offers a completely integrated turnkey engineered system including touchscreen PC's, Process Interface alarms, fiber optic or wireless signal transmission, nema 4 /explosion proof enclosures, etc.