

API-Cecom Group n'fo

Technical & Application Note A151

Application: Controlling limestone added to ash on conveyor
Type Of company: Public Utility
Location: Hawaii

Problem: The customer is a public utility that is using municipal waste to produce energy, reduce pollution, and reduce the amount of solid waste that has to be disposed of in a landfill. A waste-to-energy plants work a lot like coal-fired power plant. The difference is the fuel. Waste-to-energy plants use garbage, not coal, to fire an industrial boiler. The same steps are used to make electricity in a waste-to-energy plant as in a coal-fired power plant except that there is an additional challenge of the disposal of the ash after combustion. Ash (incombustible residue) can contain high concentrations of various metals and harmful chemicals that were in the original waste. After the ash cools on a conveyor, magnets and other mechanical devices pull metals from the ash for recycling. The ash is then treated with limestone before disposal in the landfill. The customer has to control the amount of limestone added to the ash. They are using a Pepperl+Fuchs DK10 laser print mark contrast sensor to monitor the amount of limestone that has to be added to the ash but they need to both scale and isolate the output from the sensor so it is compatible with the plant ABB control system.

Note: for additional information on this process see <http://en.wikipedia.org/wiki/Waste-to-energy>

Solution: Since the customer wants "hot swap-ability" as well as scaling and isolation it was recommended that they use an API 4300 G. This allows the customer to use a standard off the shelf unit that is factory ranged for the customer's specific range and since it is a "plug-in" module it gives the customer the "hot swap-ability". An alternate solution for a customer would be the APD 4300.



API 4300 G

DC to DC Isolated Transmitter



Benefits of API's solution:

- Accurate control of limestone added to ash
- Lower cost due to labor savings
- Hot Swap ability
- Use a standard product

API Unique Feature



Functional Test Pushbutton

The Functional Test Pushbutton will, when pressed, output a test signal independent of the input signal. This signal is adjustable from 0-100% of span by holding the Test button down and adjusting the Test potentiometer on the unit. On some models the test signal is fixed at 50% of output span. This feature allows the technician to temporarily inject a test or preset calibration signal into the output loop without manipulating the input signal. This signal can be used to check loop status, downstream display operation,

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