



ABB supplies continuous emission monitoring system (CEMS) for unique waste-to-energy plant in Denmark

Measurement & Analytics – Measurement made easy



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Waste to energy
plant emitting 'ring'
of carbon dioxide

The architectural design of the waste-to-energy plant roof serves a public leisure landscape and includes a snow slope for skiers of all levels.

The Amagerforbraending waste-to-energy plant is the most innovative concept for waste management and energy production worldwide. It was completed in 2016, just three kilometers from downtown Copenhagen.

Rather than hiding industrial processes, the concept wants to connect the people to the issues behind waste management. The architectural design of the plant roof serves as a public leisure landscape and includes a snow slope for skiers of all levels.

The form of the emission are single smoke rings with the diameter of 25 m / 82 feet and 5 m / 16.4 feet height. This form of an emission ring is a phenomenon which can be found in nature, for example it has been observed at Mount Etna, Sicily. The emission of carbon dioxide is now countable by everybody in the area and gives a platform for responsibility. One ring emits exactly 250 kg / 551 lbs of carbon dioxide.

How does it work?

Watch a youtube video that explains the vortex exhaust.

http://youtu.be/_GL3xAalcvI



1

1 Municipal waste ready to be fed into incinerator
2 ACF5000-CEMS System

This state-of-the art plant reduces environmental impact to a minimum by using the best technical solutions available.

ABB system

In order to serve the demand for state-of-the art technical solutions, the ACF5000 CEMS system was chosen due to key unique features. The Amagerforbraending incinerator did not want to use an additional FID module with Hydrogen for public safety reasons. The ABB solution offered multi-component measurement and VOC (Volatile organic compounds) measurement via FTIR (Fourier-transform infrared spectroscopy).

Furthermore the ACF5000 is equipped with an internal validation unit and automated QAL3 evaluation and reporting is possible without test gases. So cost, handling and risk of operation and can be reduced to a minimum.

Complete turnkey systems

The ACF5000 combines the advantages of an FTIR spectrometer and oxygen measurement. The measurement technology FTIR or FID (Flame ionization detector) for VOC measurement can be chosen optionally. The high resolution FTIR spectrometer provides selective infrared measurements of infrared active gas molecules with a high sensitivity and stability. The optional FID measures hydrocarbons at low and high ppm levels.



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Further features of the ACF5000

- PROFIBUS, Modbus or Ethernet offers unrivalled connectivity to PLC's, Uppercase D data Acquisition Handling Systems (DAHS) or DCS
- Integrated external signal and communications to PLC, DAHS or DCS via single serial line enables safer cabling
- Increased availability by remote service and diagnosis
- Post-process data with function block program

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