

Biogenic CO₂ continuous monitoring by long-term sampling

PROCESS & EMISSION MONITORING SYSTEMS

There is growing interest for governments and plant operators to determine the fraction of “green” energy. But in incineration/ co-incineration and Refuse-Derived Fuel (RDF) plants it is quite difficult to determine the biogenic fraction of the emitted CO₂. Fossil material and therefore fossil fuel does not contain ¹⁴C.

With the determination of the ¹⁴C-fraction of the emitted CO₂ it is then possible to determine the biogenic fraction of burned fuel.

The AMESA B is then the ideal tool to determine the biogenic fraction of burned fuel with a high accuracy.

The tool for the determination of the portion of green energy



MAIN BENEFITS:

- The emissions of biogenic CO₂ are seen as CO₂ neutral
- Biogenic or carbon-neutral stack gas CO₂ is deductible from a company’s greenhouse gas inventory required for reporting under various regulations
- No CO₂ emission trading certificates necessary for this portion
- Determination of biogenic CO₂ emissions could generate cost savings for the operator
- The determination of biogenic CO₂ emissions could be an efficient tool to support governments for the demonstration of their « green energy » policy



AMESA-B
Control cabinet with sampling probe

MAIN APPLICATIONS:

- > RDF (Refused Derived Fuel) Waste-to-Energy
- > Electricity generation, Coal co-firing, Steel...
- > Cement and lime need to quantify their biogenic carbon dioxide (CO₂) emissions for regulatory compliance.

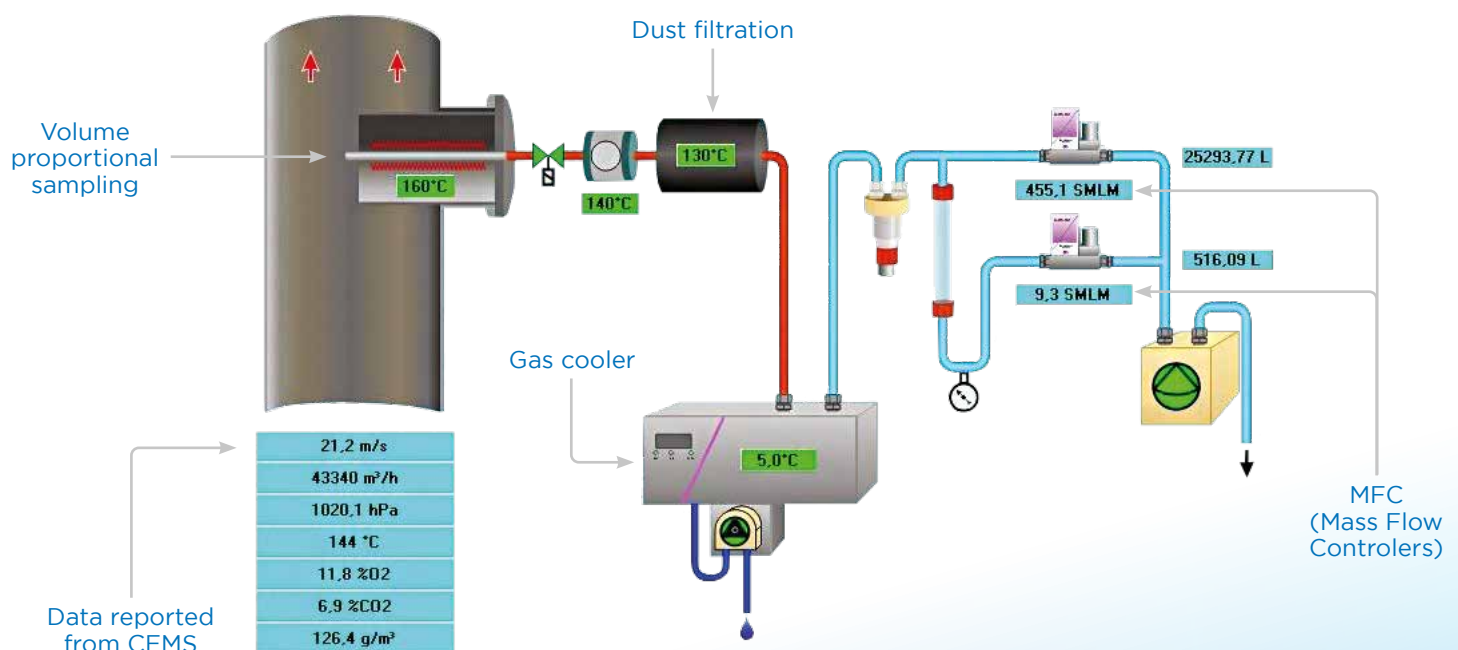
Continuous monitoring of Biogenic CO₂ emissions **AMESA-B**

PRINCIPLE OF OPERATION:

- Adsorption of CO₂ in an adsorption trap filled with Ascarite or soda lime
- After the sampling period the adsorber cartridge is exchanged and sent to a laboratory to determine the ratio of biogenic and fossil-derived CO₂ by a Carbon-14 dating measurement
- Volume proportional extraction of a part of the flue gas via a heated sampling probe
- Sampling period of several hours until 1 month
- The sampling principle fulfills the requirements of EN ISO 13833



AMESA-B Operating Principle



TECHNICAL SPECIFICATIONS

Operating temperature wo heater & AC	+5°C to +38°C (40°F to 100 °F)
Protection class	IP66 (NEMA 4X) Fiber Glass Enclosure
Max. length of umbilical	20 m
Sampling Flowrate	5- 50 sml/min
Dimensions (H x W x B)	1000 x 800 x 300 mm
Weight	70 Kg
Power supply	120/240 VAC (optional 115 VAC) 50/60Hz
Power consumption (heaters excluded)	approx. 0.5 kW
1-2 probe heaters	max. 1.2 kW (up to 3 kW per heater)
1 umbilical heater	max. 1 kW
External Fuse by max. power of heaters	32 A
Operation and Communication	touch panel and DAS - Modbus TCP

MAIN OPTIONS:

- External values input as e.g. stack volume flow by 4-20mA or Modbus
- Outputs as e.g. Run, Break, Alarm as potential free contacts or Modbus
- Air conditioner for ambient temperatures >+38°C (>100 °F), power consumption: +0.5kW, mounting on top -> H = 1200mm
- Cabinet heater for ambient temperatures <+5°C, power consumption: +0.25kW

