



## AMESA-B Biogenic CO<sub>2</sub> Monitoring System



The increase of greenhouse gas (GHGs) emissions is impacted by the fuels combusted in Energy from Waste sites and power generation plants.

Combusted fuels release huge amounts of carbon dioxide (CO<sub>2</sub>) emissions into the Earth's atmosphere.

However, CO<sub>2</sub> made up of biogenic and non-biogenic carbon and is among the leading factors which have been shown to contribute to global warming.

There has been an increasing demand for the quantification of biogenic CO<sub>2</sub> in emissions.

The Environment Agency (EA) now requests EfW plant operators to report Pollution Inventory (PI) emissions to include biogenic CO<sub>2</sub> sources.

a1-cbiss supply the AMESA-B, a reliable continuous, automated sampler follows the EN ISO 13833 standard. It uses the <sup>14</sup>Carbon method to determine the biogenic and fossil fraction of industrial CO<sub>2</sub> emissions.

The automated sampler extracts CO<sub>2</sub> samples from exhaust gas in the flue via a heated sampling probe. An adsorber cartridge filled with sodium hydroxide or soda lime determines the biogenic fraction of CO<sub>2</sub> emissions.

“The only way to cost-effectively determine the biogenic fraction of industrial CO<sub>2</sub> emissions”

### PRODUCT BENEFITS

- The emissions of biogenic CO<sub>2</sub> are seen as CO<sub>2</sub> neutral
- Biogenic CO<sub>2</sub> is deductible from a company's greenhouse gas inventory when reporting under various regulations
- No CO<sub>2</sub> emission trading certificates necessary for this portion
- Determination of biogenic CO<sub>2</sub> emissions could generate cost savings for the operator

**HOW DOES IT WORK?**

- Adsorption of CO<sub>2</sub> 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 CO<sub>2</sub> 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

**TECHNICAL SPECIFICATION**

• Operating temperature w/o 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