

## An evolution in methane potential analysis

Bioprocess Control's Automatic Methane Potential Test System (AMPTS) II allows users to determine the true methane potential and dynamic degradation profile of any substrate. This in turn will allow users to more easily determine the optimal retention time and mix of substrates for co-digesting, screen proper pre-treatment methods, and evaluate the need for additives.

### Methane potential analysis made easier

The AMPTS II is a well engineered analytical device developed for on-line measurements of ultra low bio-methane flows produced from the anaerobic digestion of any biological degradable substrate at laboratory scale.

The AMPTS II follows the same analysing principles as conventional methane potential tests, which make the results fully comparable with common methods. However, with the AMPTS II both the gas volume measurements and data logging are fully automatic during the long incubation period and experimental data is calculated and generated into a standard data sheet. This in turn significantly reduces the time and labour demand for carrying out the analysis and data calculations.

The high quality of the data obtained from the AMPTS II can be used to extract kinetic information of the degradation process, which in turn provides for a much better understanding of the dynamic degradation behaviour of a specific substrate. See the AMPTS II technical specification for a more detailed description of the product.

### System advantages

The AMPTS II provides the following advantages:

- Automated analytical procedure reducing work load
- User friendly interface for experiment setup, real-time data display and analysis overview

- On-line and real-time data logging of total bio-methane production and flow rate
- Automatic on-line pressure and temperature compensation for volume measurements
- Real-time gas flow and volume normalisation
- Algorithm option to avoid an overestimation of gas volume and flow (which may be induced by the flash gas during experimental setup)
- Possibility of multiplexing, allowing for simultaneous batch analysis at different startup times
- High quality data for extracting process kinetic information
- Standalone instrument with embedded data acquisition and web server for remote access
- Low and easy maintenance
- One of the most cost competitive solutions on the market today

### Allowing users to maximise profits

The AMPTS II allows users to more easily determine the optimal retention time and substrate mix in order to maximise the utilisation of biogas plants. This in turn will translate into a higher volume of gas produced, allowing for higher profits.

Bioprocess Control is a market leader in providing advanced control technologies for the commercial biogas industry.

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## Technical specification

### Automatic Methane Potential Test System (AMPTS) II

#### Sample incubation unit

Maximum number of reactors per system: 15  
 Reactor material: glass  
 Standard reactor volume: 500 ml  
 Dimension: 53x33x24 cm  
 Temperature control: up to 95 °C (precision of 0.2 °C)  
 Mixing in the reactor: mechanical (adjustable interval and speed), maximum speed 140 rpm

#### CO<sub>2</sub> - fixing unit

CO<sub>2</sub> trap bottles: 15  
 Volume of CO<sub>2</sub> trap bottles: 100 ml  
 Dimension of unit: 44x30x6 cm  
 Fixing liquid: 3M NaOH with pH indicator, 80 ml per bottle (not included)  
 Fixing efficiency: >98%

#### Flow cell array unit

Working principle: liquid displacement & buoyancy  
 Up to 15 cells running in parallel  
 Built-in pressure and temperature sensor  
 Integrated embedded data acquisition  
 Measuring range: 0.01 to 20 l per day  
 Measuring resolution: 10 ml  
 Dimension: 51x44x18 cm  
 Housing: plastic  
 Repeatability: 1 %

#### Software

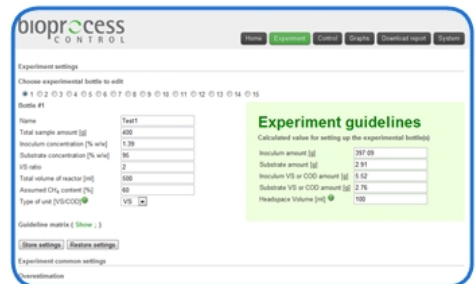
Web based software running on embedded server  
 On-line real time gas flow and volume display  
 On-line pressure and temperature compensation  
 Real time gas flow and volume normalisation  
 Algorithm to avoid overestimation of gas flow and volume (that may be induced by flash gas during experimental setup)  
 Possibility of multiplexing, allowing for simultaneous batch analysis at different start-up times  
 User friendly guidelines for experiment set up  
 On-line system logger for operational diagnosis

Power Supply: 12 V DC/3A  
 Usage: indoor

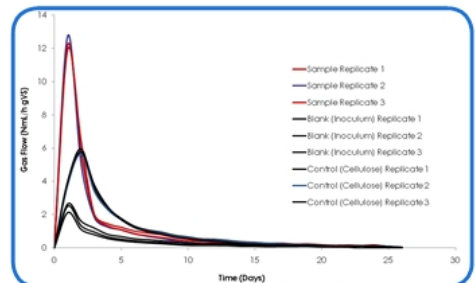
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Automatic Methane Potential Test System II



User friendly experiment set up



Easily plot degradation curves

