

AT1000 Biogas Titrator

The Simplest and Most Economical Solution for Effective Monitoring of Your Fermenters.



Introduction

Regular monitoring of biogas plants is crucial to ensure efficient operation. The Hach® AT1000 Biogas gives you immediate information about the status of your plant to anticipate any possible malfunctions and to constantly maintain optimal performance. The AT1000 is a low financial investment that quickly becomes profitable, given the productivity gains and operational safety it provides.

The AT1000 Biogas offers a complete turn-key solution that determines changes in the FOS/TAC ratio (ratio of volatile organic acids and buffering capacity) of your digester in a simple and quick manner. You can start immediately; all you need is the sample.

Hach: Leader and Pioneer in Europe for Biogas Analysis

Hach pioneered this application in 2008 with the launch of the very first Biogas titrators, this led to Hach being recognised as the industry expert within Europe. Hach solutions are based on the Nordman method which automatically calculates the FOS/TAC ratio, this method is currently considered as the gold standard for tracking a digester.

Maximum Simplicity

The AT1000 Biogas further simplifies the implementation of this analysis to make it accessible to all and at a very competitive cost. No specific preparation of the sample and no technical knowledge on the part of the operator are required, just put the sample into the beaker and press a button.

Results at Glance

Only a few minutes are needed to get the essential information to monitor your system: pH, volatile fatty acids (VFA) and buffer capacity (TAC). The FOS/TAC ratio is automatically calculated, providing immediate information on the status of the fermentation process.

Additional Parameters on the Same Instrument

The AT1000 Biogas provides the ability to simply measure with one device these additional parameters: Alkalinity (TA/TAC), Conductivity and Redox potential.



Be Right™

Maximum Analytical Quality

The AT1000 Biogas integrates Hach's expertise from the field of titration and adapts it to the methane generation industry. With new innovative and effective technologies the AT1000 Biogas guarantees accurate results, with repeatable and reliable operations.

Full Traceability

All features necessary for optimal results are integrated in the original AT1000 Biogas. It archives all analysis data that is necessary for monitoring your systems efficiency over time: Detailed results, trend curve (control board) of key parameters, data export to USB in an Excel compatible format. PC software is also available as an option.

Method FOS/TAC in brief

The FOS/TAC ratio is a critical indicator of the fermenter status and its variation must be followed. Its value determines the correct action to take for optimum performance and safety of the installation.



Basic rules for the assessment of FOS/TAC ratios (empirical values according Deula – Nienburg).

Rapport FOS/TAC	Indication	Actions
>0.6	Amount of biomass is greatly in excess	Stop adding biomass
0.5–0.6	Amount of biomass is in excess	Add less biomass
0.4–0.5	Amount of biomass is at its maximum	Monitor the system carefully
0.3–0.4	Amount of biomass is optimal	Maintain constant addition of biomass
0.2–0.3	Amount of biomass is too low	Gradually add biomass
<0.2	Amount of biomass is far too low	Quickly add biomass

Ordering Information – AT1000 Biogas

The AT1000 allows determination of Biogas within a few minutes for pH, volatile organic acids (FOS), buffering capacity (TAC) and calculated FOS/TAC ratio. It consists of the titrator AT1000 Series and Application Package FOS/TAC (Biogas):

- AT1102.98: Titralab AT1000 Series Potentiometric Titrator, 1 Burette
- AP0006.AT1102: Titration Application Pack Biogas: FOS/TAC

The Application Package includes a combined pH Intellical smart sensor, the syringe and all the necessary accessories to measure "Fostac". The pre-programmed methods are delivered on a USB key included in the kit to be downloaded within a few seconds in the titrator. The titrator comes pre-assembled and complete installation of the system requires less than 20 minutes.

To start immediate analysis on delivery the following reagents must be purchased:

- 20253: Sulphuric acid standard solution, 0.100 N, 1 L
- 2283449, 2283549 & 2283649: pH Buffer Solutions, 4.01, 7.00 & 10.01 500 mL