Simulate with a CSTR **Bioreactor**

BPC INSTRUMENTS

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A bioreactor that meets your **needs**

A series of CSTR Bioreactors

Bioprocess Control has developed a series of continuous stirred tank reactors (CSTR) specifically designed for scientists and process engineers to simulate full-scale fermentation processes in laboratory- or small pilot-scale.

Today, the company offers three size options (two, five and ten liters) and four different configurations.

Our CSTR Bioreactors are well engineered to meet the needs of the most demanding biogas labs.

Offering a flexible and modular design

All our CSTR Bioreactors have a modular design with standard connection points, allowing for easy assembly, disassembly and maintenance. Each CSTR reactor can be operated alone or connected in a series, entirely depending on user needs. Moreover, each reactor is fully compatible with the BioReactor Simulator and µFlow for simulating biological fermentation processes where gas flow measurement is needed.

size options

3

(i.e. 2, 5 and 10 Litres)

High quality and robust

The CSTR Bioreactors are constructed from the highest quality materials, and fabricated and tested under controlled conditions. All stainless steel utilised is highly resistant to corrosion and has been selected specifically for biogas and biofuel applications. The end result is a series of bioreactors specifically designed and highly suited for the most demanding biogas labs.

Easy to run and maintain

All bioreactors are adapted for both low and high solid content feed-stocks and have excellent sealing under anaerobic conditions, using a robust tri-clamp system. Also, the bioreactors have a wall-jacket configuration that allows for independent heating and cooling. Overall, operating and maintaining a Bioprocess Control bioreactor is as easy as the decision to purchase one.

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configurations

(i.e. CSTR-5G, 5S, 10S and 2G for BRS)

Wall jacket configuration for independent heating or cooling

Sampling port for online pH or temperature monitoring

User friendly functionality

Bioprocess Control's CSTR Bioreactors are extremely user friendly and specifically designed with ease of use in mind. For example, the reactor lid and connection points offer a tri-clamp configuration for easy assembling and disassembling. This translates into a CSTR Bioreactor that is both easy to use and maintain. For all stainless steel reactors, the slurry discharging port offers an easy to open ball valve.

Moreover, these reactors offer a self-discharging port for digested slurry with an automatic slurry level control.

Viewing port for complete control

All of our CSTR Bioreactors constructed of stainless steel contain two viewing ports on opposite sides allowing for visual inspection of the process. This allows users to not only monitor a continuous process via key parameters such as gas flow, pH and temperature, but also detect foam formation during the AD process. This ability to view a continuous process provides for even better control during the operation of the bioreactors and further distinguishes the CSTR Bioreactors from many of its peers who do not offer the same feature.

A highly flexible design

Our CSTR Bioreactors have been designed to be highly flexible. For example, the inlet port of the reactor can accommodate both low and high solid feedstocks. This in turn provides users with enormous flexibility in terms of the types of substrate materials that can be simulated. The reactors are also fitted with two sampling ports for in-line sensors, which allows for online monitoring of pH, ORP or temperature. Overall, the CSTR Bioreactors have been designed to deliver value from the simplest of applications to the most demanding of biogas labs.

A unique wall jacket design

The CSTR Bioreactors also offer a unique wall jacket configuration for independent heating or cooling. By connecting the CSTR reactors to an external water bath, users will be able to precisely control the temperature of the bioreactors, by circulating heated or cooled water continually through the wall jacket that covers the entire side of the reactor.

Never again does one have to deal with uneven temperatures, allowing for a greater control of experiment settings and, in turn, more accurate experiment results.

Technical specifications

CSTR-5G

Reactor type: CSTR

Volume: 5 l

Materials: high quality glass and stainless steel (AISI 316)

Mixing: mechanical agitation with manual and automatic remote control

Temperature control: external

Dimension: H 38 x W 24 cm

Weight: 7.8 kg

Usage: indoor applications

CSTR-5S

Reactor type: CSTR

Volume: 5 l

Materials: high quality stainless steel (AISI 316)

Mixing: mechanical agitation with manual and automatic remote control

Temperature control: external

Dimension: H 74.5 x W 28.5 cm

Weight: 12.8 kg

Usage: indoor applications

CSTR-10S

Reactor type: CSTR

Volume: 10 l

Materials: high quality stainless steel (AISI 316)

Mixing: mechanical agitation with manual and automatic remote control

Temperature control: external

Dimension: H 77.5 x W 32.5 cm

Weight: 16.5 kg

Usage: indoor application

Features

- Wall jacket configuration for independent heating or cooling
- Double view port configuration for all stainless steel reactors
- Flexible feedstock inlet port for both low and high solid content feedstocks
- Sampling port for online pH or temperature monitoring
- Reactor lid and connection points with tri-clamp configuration for easy assembling and disassembling
- Slurry discharging port with ball valve for all stainless steel reactors
- Self-discharging port for digested slurry with automatic slurry level control for all stainless steel reactors
- Multifunction agitation with manual and automatic remote control (adjustable speed and rotation directions), max. speed 300 rpm

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