



Biostat® Q

Autoclavable Multi-Fermentor System

“Ready to use”

DCU 3 control system

Choice of culture vessels

Independent vessel control

Minimal space requirements

The Biostat® Q is the multi-fermentor system designed specifically for reproducible serial experimentation. The Biostat® Q makes the transition from shaker flasks to stirred tank fermentors – simple.

The Biostat® Q is ready to use right out of the box. It is delivered with a supply unit, magnetic drive console and it employs a DCU 3 digital controller. These modular system components have been combined so as to minimize the space requirements.

The supply unit includes peristaltic pumps, for acid and

base, and gas flowmeters. It also manages the utility connections.

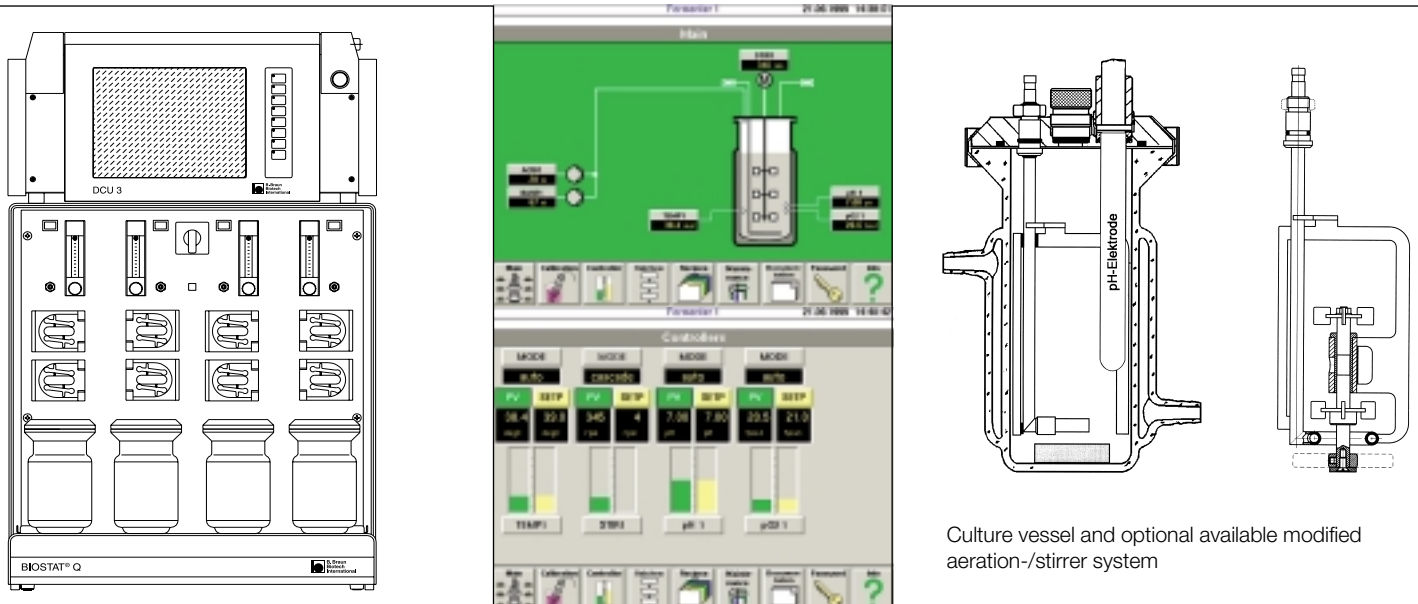
The power of the DCU 3 allows completely independent control for each vessel, including alarm limits.

Each of the four autoclavable glass vessels is equipped with sensors (temp., pH and DO), sparger, filters and addition ports. With two vessel types to choose from, either 0.5 l or 1 l total volume. A removable vessel tray on top of the drive console eases handling, before or after sterilization.

In contrast to shaker flasks, the Biostat® Q supports the on-line measurement and control of agitation, temperature, pH and dissolved oxygen. Optionally, level/foam control is available.

The Biostat® Q adapts to cell culture as well as bacterial fermentation applications. An optional gas mixing system is available for use with cell culture configurations along with special impellers.

- **Precise, independent temperature control**
- **Dissolved oxygen control via stirrer speed**
- **Built-in peristaltic pumps for pH control**
- **Up to four recipes per culture vessel**
- **Integrated RS 422 host computer interface**



Culture vessel and optional available modified aeration-/stirrer system

The DCU (Digital Control System) is a local control system, specially tailored to bioprocess (fermentation/cell culture) automation. In its third generation, there are nearly 1500 worldwide.

The DCU 3 is operated using a graphical interface on a flat panel touch-screen. This intuitive interface eases screen navigation and the changing of parameters, keeping the learning curve to a minimum.

Simultaneously operation of this multi-fermentor system is simplified up using a "Change Unit" key, on the operator

interface, to select between successive units.

Standard Biostat® Q automation functionality includes process measurements, calibration routines, and a set of control loops for temperature, pH and dissolved oxygen via stirrer speed. Additional standard software features include: alarm monitoring and dosing counters for built-in pumps.

Furthermore, up to four recipes per vessel may be created and stored for future use. In each recipe is stored all specific process parameter

settings. This feature is vital at serial experiments.

The software has been developed under a quality control system which follows the GAMP (Good Automated Manufacturing Practice) guidelines. This helps guarantee consistency throughout the software's lifecycle.

The DCU 3 has an optional three level password system. It controls user access, and logs events and user actions. This may be useful in protecting valuable experiments from unauthorized manipulation. In research laboratories,

the versatility of the Biostat® Q is enhanced even more by using MFCS/win... our supervisory control software. MFCS/win may be connected to one or more Biostat® Qs, or combinations of other Biostat® fermentors or even fermentors from other manufacturers.

Off-line data management allows the incorporation of such data as cell densities, substrate and product concentrations etc. Combine this with the comprehensive batch data management functions within MFCS/win to simplify the process of organizing research data.

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