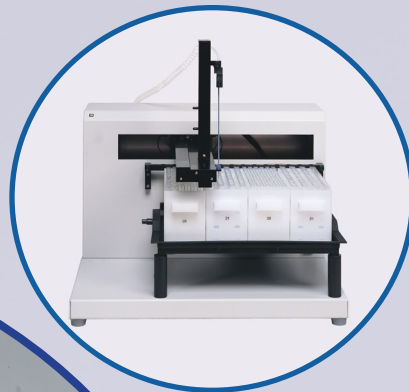


# SEGFLOW<sup>®</sup>

## 804M

SEGMENTED ON-LINE  
SAMPLING



Sample from 8 bioreactors & deliver the  
sample to 4 analyzers or Fraction Collectors

PATENT PENDING

**Flownamics**<sup>®</sup> automated sampling system, the **SEG-FLOW**<sup>®</sup> 804M draws a sample from 8 different bioreactors or process streams. It then directs that sample to 4 analyzers or fraction collectors (Flow-Fraction<sup>™</sup>). The SEG-FLOW allows you to put existing analyzers or fraction collectors On-Line. It is fully automated and is controlled by our Flow-Web<sup>™</sup> software. The system is capable of controlling analyzers or collectors through RS-232, TCP/IP, OPC, or analog inputs and outputs. SEG-FLOW uses Flownamics patent pending “Segmented On-line Sampling<sup>™</sup>” technology. This allows the system to accurately, reliably, and rapidly sample as little as 250 ul from your reactors.

## Fermentation Vessel / Bioreactor Control:

The SEG-FLOW can withdraw sample from a reactor or process stream and then send it to multiple analyzers or a fraction collector (Flow-Fraction) dependent on your model. The sampling system can then control feed to the vessels based on set target concentrations in the Flow-Web<sup>™</sup> software. An analyzer sends back the measured result to the SEG-FLOW and this result is then posted in the software. The system then controls a feed pump or sends a signal to an existing feed system based on the measured result and target concentration. There are multiple outputs for each vessel.

## Significant features of the SEG-FLOW<sup>®</sup> 804M

### Segmented On-Line Sampling<sup>™</sup>

- Minimal sample withdrawal
- Rapid and accurate sampling
- Low consumption of cleaning and/or sterilizing solutions

### SEG-FLOW is versatile

- Sample from 1 to 8 vessels (streams) at a time
- Withdraw a cell-free sample using the FISP<sup>®</sup> sampling probe(s)
- User sets the frequency of sampling and amount of sample withdrawn
- Controls analyzers and fraction collectors
  - \* Biochemistry analyzers
  - \* HPLC and UPLC systems
  - \* Your preferred analytical device
- Logs data information on each vessel or stream

### Internal Web Server

- System controlled internally with Flow-Web<sup>™</sup> software
- View and control system from any PC or smart phone with internet access
- Touch screen control panel enables you to control and review process data

### Process and Feed Control

- Controls feed pumps or sends signals to existing feed systems
- Analog (4 input and 8 output)
- RS-232 port
- TCP/IP
- OPC

**Small foot print 12” W x 10” H x 15” D**



## Internal Web Server:

The screenshot shows the FLOWNAMICS web interface. At the top, it says "logged in as supervisor | logout" and "Tue Oct 19, 2010, 03:35:56 PM". Below the header are tabs for "Control", "Detail", "Trend", "Output", "Status", "Password", and "Settings". On the left, there is a vertical menu with buttons for "Vessel 1" through "Vessel 8", "All", and "Flow-Fraction". The main content area shows a "File" dropdown set to "YSI\_Data.txt", "Start Date" as "2009-10-18", "End Date" as "2010-10-19", and "Lines Per Page" as "20". There are "Set" and "Save Data" buttons. Below this is a table with the following data:

Date/Time	Temperature	Chemistry	Concentration	Unit
2010-09-10 13:06:24	23.59	DEX	0.984	g/L
2010-09-10 13:02:24	23.59	DEX	0.992	g/L
2010-09-10 11:35:42	23.71	DEX	0.965	g/L
2010-09-10 11:31:42	23.71	DEX	0.98	g/L
2010-09-10 11:18:07	23.67	DEX	0.99	g/L
2010-09-10 11:14:07	23.67	DEX	0.985	g/L
2010-09-10 11:05:33	23.64	DEX	0.991	g/L
2010-09-10 11:01:33	23.64	DEX	1.01	g/L
2010-09-10 10:49:47	23.68	DEX	0.978	g/L
2010-09-10 10:45:47	23.68	DEX	0.999	g/L
2010-09-10 10:41:39	23.65	DEX	0.987	g/L

## FLOW-WEB™ [Web based control software]

*User friendly with minimal training needed*

### Minimal Setup

- Vessel (stream) ID's
- System and vessel settings

### Logs and plots data

- Data logged in a spread sheet
- Presented in chart or trend format

### Maintenance and Task Reminders

- Software instructs user to change pump tubing, refill cleaning fluids or perform other tasks
- System will e-mail individuals with warning or error messages
- E-mail technical support directly from system

### Automatic Rinse/Sterilization Cycle

- Sample line is cleaned and/or sterilized after every sample

### Software updates through website

- Easy upgrades and custom solutions over the internet

### Flexibility

- Check system status from any PC or smart phone with internet access and a web browser
- Save data in Excel format or export the data to other programs
- Software can be modified for custom applications

NOTE: Product literature is available for Flownamics® In-situ Sampling Probe [FISP®] which is used for withdrawing a cell-free sample from a fermentation vessel or bioreactor. FISP® fits into the vessel's side or top port and is sterile in-situ. Models are available for bench top up to large production scale vessels. See our website for more info or call to request literature.

# Collect your On-line Samples for Off-line Analysis



**FlowFraction 100**



**FlowFraction 200**



**FlowFraction 300**

## FlowFraction featuring:

- Septum piercing
- Sterile samples
- One to four 60 tube racks
- Accommodates a variety of tube sizes

- Temperature control from 4° C to 40° C
  - Thermostatic Rack
  - Peltier Control



**Thermostatic Rack**

SegFlow, FISP and Flownamics are registered trademarks of Flownamics Analytical Instruments, Inc.

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