

# Micro-Crossflow Membrane Filtration Systems

Frings



## Crossflow Filtration Systems for a Broad Range of Applications and Requirements

### Characteristics:

- ✓ Systems for lab and industrial applications with capacities ranging from a few L/24h to several hundred m<sup>3</sup>/24h
- ✓ Cut off in a range of 0.05 µm – 0.2 µm
- ✓ Hollow fiber and tubular modules available
- ✓ SIP and CIP modules available
- ✓ Design according to strict sanitary standards for 'Biotech' applications
- ✓ High automation standard provides for easy handling and low maintenance costs

Products for Downstream Processing





# Micro-Crossflow Membrane Filtration Systems

H. FRINGS GmbH & Co. KG  
Jonas Cahn Str. 9  
53115 Bonn, Germany  
Phone ++49 228 98 33 0  
Fax ++49 228 98 33 195  
chemtec@frings.com  
www.frings.com

## Standardized Filtration Units

Industrial filtration units with flow rates from 1,000 L/h to 4,500 L/h to be combined to make large systems. The units are equipped with hollow fiber membranes (cut offs from 0.05  $\mu\text{m}$  to 0.2  $\mu\text{m}$ ). Successfully applied for the filtration of beverages, fermentation broths, mineral and polymer slurries, and for slop from distilleries. Module concept developed in cooperation with a worldwide leading module manufacturer and adapted to our high performance filtration systems.

## Optional Equipment

### Pre-filter

- To ensure a constant filling level in the circulation tank
- Cut off = 200  $\mu\text{m}$
- Designed as a rack unit

### Filtrate Tank

- Buffer tank for filtrate
- Turbidity control with alarm signals
- Designed as a rack unit

### Circulation Tank

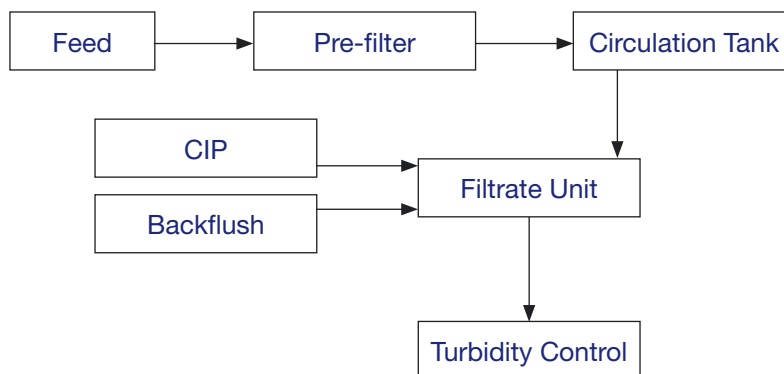
- Sampling of rejects
- Level controls
- Material: PP

### CIP Tank

- Storage tank for cleaning agent
- Mixing
- Determination of filtration parameter with water

### Backflush System

- Increase of average filtration performance
- Prolongation of performance time



**Figure 1:**  
Block diagram of filtration system with optional equipment

## Automation and Controls

- Sensors and amplifiers
- Basic alarm for temperature, pressure, filtrate flow and levels
- Free selection of all setpoints
- Alarm indication
- ...

## Services, engineering and design of automated filtration units

- Laboratory and pilot tests
- Feasibility studies, including ROI calculation
- Basic engineering
- Detail engineering
- Manufacturing, delivery and installation
- Training
- Maintenance

