

SW18 System

Tools enabling Innovation

Laboratory Membrane Solutions

Bench Membrane System

The MMS SW18 System is an easy to use batch laboratory membrane device for microfiltration, ultrafiltration, nanofiltration and reverse osmosis operations.

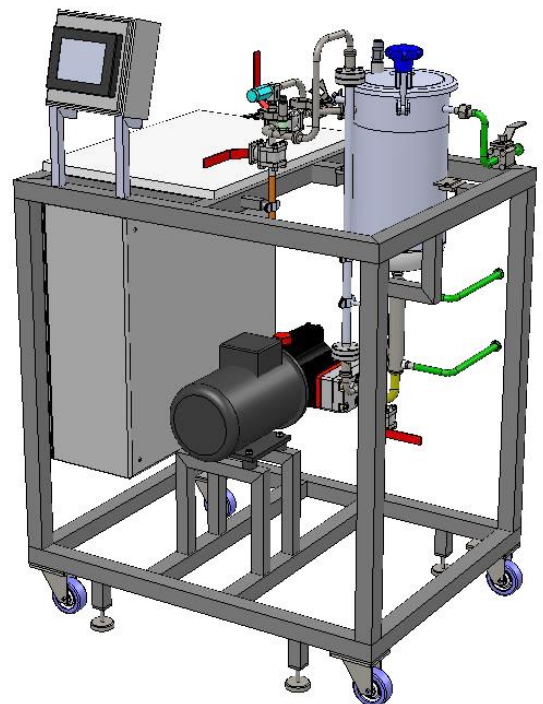
Applications such as fractionation, purification and concentration of molecules can be tested.

The Bench System SW18 can be equipped with different types of modules for test applications up to 40 bar.



Key Features

- Speed control of pressure & circulation pump for variable membrane crossflow velocity
- High operating pressures
- Testing of spiral wound, ceramic, hollow fibre and tubular elements (wide range of membranes available)
- Multitube heat exchanger for temperature regulation
- HMI interface with data logging



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Applications

Food & Extract Sector

- Protein fractionation & concentration
- Extract fractionation & concentration
- Hydrolysate fractionation & concentration
- Sugar fractionation & concentration
- De-alcoholization of beer and wine
- Soya milk de-bittering

Bio-Pharmaceutical Sector

- Fermentation broth clarification
- Enzyme & protein concentration
- Peptide concentration & de-salting
- API purification & concentration
- Oligosaccharide purification & concentration
- Solvent recovery or exchange

Natural Oils Sector

- De-waxing
- De-colourization
- Purification
- Concentration
- Oil/water separation

Aroma and Colorant Sector

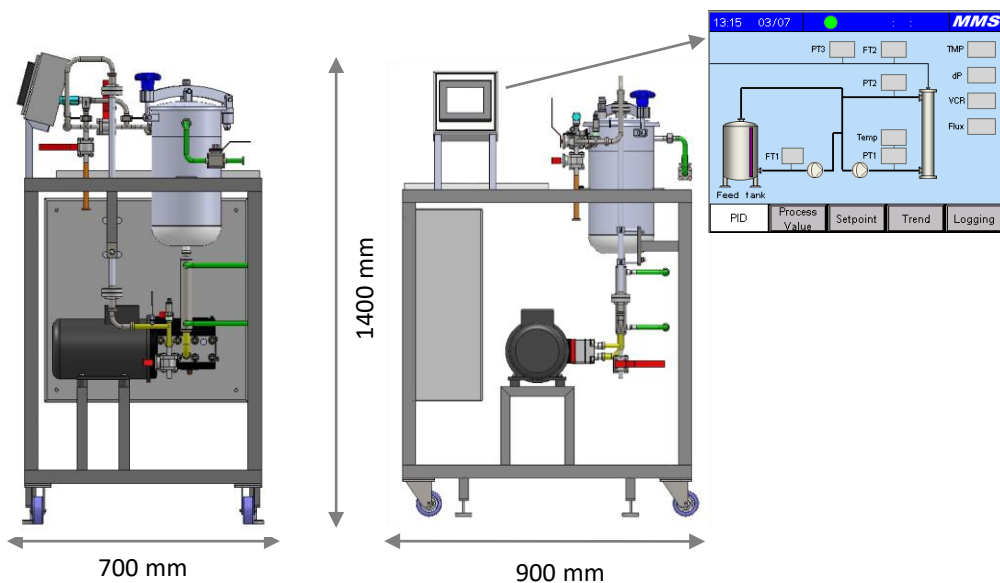
- Herbal extract fractionation & concentration
- Natural colour purification & concentration
- Aroma sterilization
- Aroma concentration
- Evaporator condensate treatment

Chemical Sector

- Acid/caustic recovery
- Catalyst separation
- Solvent exchange & recovery
- Polymer purification & concentration
- Condensate water purification

Biofuels Sector

- Organic acid clarification & purification
- Organic acid concentration
- Sugar clarification & concentration
- Ethanol purification
- Condensate water recovery

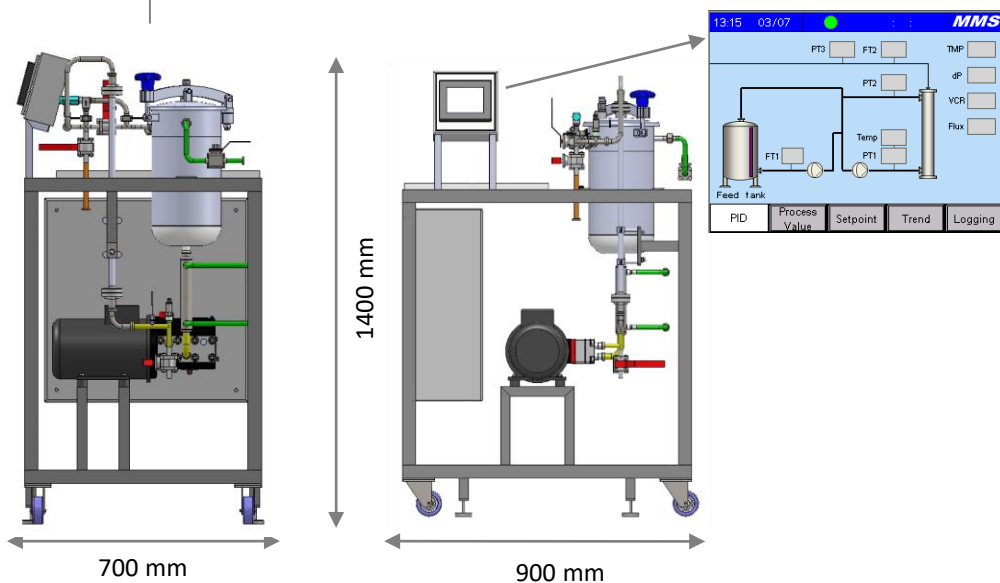


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Specifications

| | |
|-----------------------------|---|
| Dimensions (L x W x H) | 1020 x 600 x 850 (mm) |
| Weight | 100 kg |
| Installed power requirement | 1.5 kW (220/110V) |
| Membrane type | Spiral wound 1812 module (other membrane types available) |
| Membrane area | 0.3 m ² (spiral wound) |
| Pressure/Circulation pump | High pressure pump (speed control), with CIP and SIP capability |
| Permeate flow rate | Permeate flow 1 – 5 l/h (flow rate is dependent on the feed characteristics) |
| Flow rate | 450 L/h |
| Tubing | All tubing and fittings Mat. 316 L |
| Feed tank | Stainless steel 316L, Volume 10 L |
| System hold up volume | 500 – 800 mL (dependent on module used) |
| Instruments | 2 x Pressure transducers (0 – 50 bar) 1 x Temperature transducer (0 – 100 °C) 1 x Balance (0 – 15 kg, 1 g resolution) |
| Gaskets, Seals & O-rings | EPDM (others on request) |
| Pressure rating | PN40 |
| Temperature rating | 5 – 80 °C (polystat required) |
| HMI | Touch panel for process control, indication of parameters and data logging |



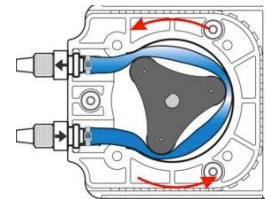
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Options

Diafiltration Kit

A peristaltic pump, integrated into the control unit, can be used for continuous diafiltration process.



Solvent Module Kit

A housing suitable for the solvent stable module is available. The seals, O-rings and membranes for pump will be delivered in solvent stable polymer.



Purged Tank Kit

The process tank is modified to allow for nitrogen purging operations.



Different Modules

| | |
|--------------|------------------------------|
| SW | Spiral wound modules |
| HF | Hollow fibre modules |
| Ceram | Ceramic 10 mm elements |
| Tub | Tubular modules (on request) |



Membrane Cut-Offs

| | |
|----------------------------------|-----------------------------|
| SW Microfiltration | 0.3 µm |
| SW Ultrafiltration | 2.5, 3.5, 5, 10, 50 kDa |
| SW Nanofiltration | 150 Da, 300 Da, 1000 Da |
| SW Reverse Osmosis | 93% & 99% NaCl rejection |
| HF Microfiltration | 0.2 & 0.5 µm |
| HF Ultrafiltration | 10, 30, 50 & 150 kDa |
| Ceramic - Microfiltration | 0.1, 0.2, 0.45, 0.8, 1.4 µm |
| Ceramic - Ultrafiltration | 15, 50, 150, 300 kDa |
| Ceramic - Nanofiltration | 500 Da, 700 Da, 1000 Da |

