

## Pall® Microflow XL-Brine Crossflow Microfiltration Systems

Smart Systems for Reliable Cheese Brine Purification

### Description

The Microflow XL-Brine systems are specifically designed to meet needs and requirements of brine purification in modern cheese plants. Clarification is achieved without the need for filter aids or centrifuge. The fully automated Microflow system provides an environmentally friendly solution for longer brine life, with a reliable microbial stabilization which reduces the risk of cheese contamination from spoilage or pathogenic microorganisms during the brine salting process.

The system utilizes Pall's proven high area, hollow fiber membranes with unique mechanical strength and excellent chemical resistance, which allow high productivity and repeated exposure to aggressive cleaning regimes. When coupled with the user friendly software with cycle programming and a compact footprint, the Microflow XL-Brine series is the smart solution for reliable cheese brine regeneration.

### Cost Saving Benefits

With Pall's extensive experience in crossflow filtration of food and dairy streams and dedication to simplified process design and control logic, the Microflow XL-Brine system incorporates unique features which enable dairies to perform clarification at low operating costs while providing constant and high brine filtrate quality.

These include:

- PVDF membranes with high mechanical strength for longer service life
- High area, high flow modules for more compact and more economical systems
- Backpulse capability for increased system productivity
- Hollow fiber membrane with 1.4 mm open channel for optimized cleaning
- Fully automated cycle programming for unattended operation and reduced labour and downtime
- Transparent module housing to confirm filtrate quality and enhance troubleshooting capabilities
- On board tanks, for easy cleaning, concentration and integration
- User friendly interface and automated chemical dosing for reliable operation



Pall Microflow XL-Brine Crossflow Microfiltration System

### Microflow XL-Brine Membranes

The Microflow XL-Brine modules incorporate Pall's proven symmetric hollow fiber membranes. The larger diameter, high flow modules with 21.5 m<sup>2</sup> of filter area, have at least twice the filter area of typical competitive hollow fiber modules. The modules components include:

Membrane	PVDF
Potting	Epoxy resin
Sleeve	Polypropylene
Housing	Transparent polysulphone
Seals	Ethylene Propylene copolymer

### Microflow XL-Brine System Components

The Microflow XL-Brine systems are fully automated, modular systems available with 2 up to 8 crossflow modules. All metal wetted parts are 316L stainless steel.

Piping manifold, membranes, pumps and instruments are mounted on a mobile frame, which includes the following :

- Stainless steel pre-filter screen for large particles
- On board concentration / cleaning tank
- Feed pump with 316L stainless steel cover
- Circulation pump with 316L stainless steel cover
- Reverse filtration (back flush) pump
- Magnetic flow meter with batch control
- CIP function with 1 µm water filter and temperature control
- Automatic chemical dosing
- Spray balls in tanks, piping and pneumatic valves for CIP
- Touch screen PLC
- Pressure, temperature and dry run protection

## Microflow XL-Brine Options

The following options are available for additional supply :

- Low Concentration Volume (LCV) feature for further reduction of concentrate volume
- Dummy modules in 316L stainless steel, for systems with more than 3 modules
- Frequency inverter on feed pump with backpressure valve

## Compliance

The Microflow XL-Brine systems are manufactured in accordance with European Pressure Directives and each system is supplied with a CE mark.

Various Microflow modules have been qualified for compliance to specific regulatory standards for products coming into contact with foodstuffs. Please contact Pall for details.

## Operating Conditions

Brine filtration :

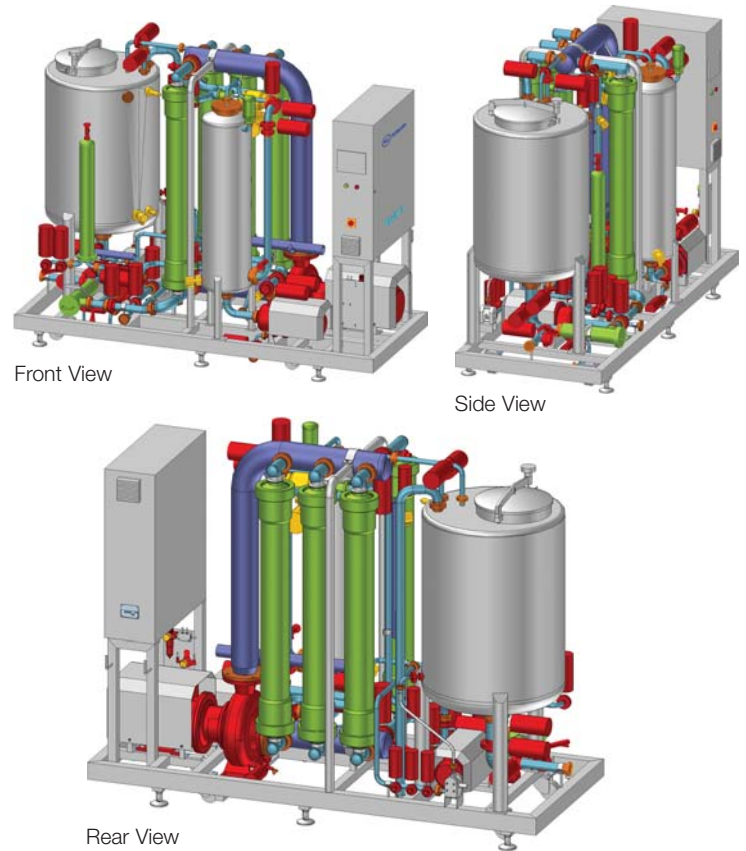
Inlet Pressure : 0.5 to 3.5 bar (7 to 50 psi)

Temperature : 0 to 25 °C (32 to 77 °F) and typically 4 to 15 °C (39 to 59 °F)

Maximum temperature for cleaning :

65 °C (150 °F)

## Standard Filtration Skid Specifications



Model Characteristics	Microflow XL- Brine					
	XL2	XL3	XL4	XL5	XL6	XL8
# of modules	2	3	4	5	6	8
Filtration surface area	43 m <sup>2</sup> (463 ft <sup>2</sup> )	64.5 m <sup>2</sup> (694 ft <sup>2</sup> )	86 m <sup>2</sup> (926 ft <sup>2</sup> )	107.5 m <sup>2</sup> (1157 ft <sup>2</sup> )	129 m <sup>2</sup> (1389 ft <sup>2</sup> )	172 m <sup>2</sup> (1851 ft <sup>2</sup> )
Length	2.4 m (7.87 ft)	2.4 m (7.87 ft)	2.7 m (8.86 ft)	3.0 m (9.84 ft)	3.0 m (9.84 ft)	3.3 m (10.83 ft)
Width	1.2 m (3.94 ft)	1.2 m (3.94 ft)	1.2 m (3.94 ft)	1.2 m (3.94 ft)	1.2 m (3.94 ft)	1.2 m (3.94 ft)
Height	2.15 m (7.05 ft)	2.15 m (7.05 ft)	2.15 m (7.05 ft)	2.15 m (7.05 ft)	2.30 m (7.55 ft)	2.30 m (7.55 ft)
Weight (empty)	1310 kg (3946 lb)	1420 kg (3130 lb)	1550 kg (3417 lb)	1590 kg (3505 lb)	1690 kg (3726 lb)	1790 kg (3946 lb)
Raw brine tank	320 l (84.5 gal)	320 l (84.5 gal)	530 l (140 gal)	530 l (140 gal)	530 l (140 gal)	530 l (140 gal)
Filtrate brine tank	60 l (15.9 gal)	60 l (15.9 gal)	110 l (29.1 gal)	110 l (29.1 gal)	120 l (31.7 gal)	120 l (31.7 gal)
Raw brine inlet	DN 50	DN 50	DN 50	DN 50	DN 65	DN 65
Filtrate brine outlet	DN 50	DN 50	DN 50	DN 50	DN 65	DN 65
Concentrate outlet	DN 50	DN 50	DN 50	DN 50	DN 50	DN 50
Water inlets	DN 25	DN 25	DN 25	DN 25	DN 25	DN 25
Chemicals inlet	DN 15	DN 15	DN 15	DN 15	DN 15	DN 15
Compressed air inlet (instrument quality)	Pneumatic hose 10 x 8 mm or ¼" internal thread	Pneumatic hose 10 x 8 mm or ¼" internal thread	Pneumatic hose 10 x 8 mm or ¼" internal thread	Pneumatic hose 10 x 8 mm or ¼" internal thread	Pneumatic hose 10 x 8 mm or ¼" internal thread	Pneumatic hose 10 x 8 mm or ¼" internal thread
Wattage	9 kW	11 kW	13.5 kW	16 kW	18 kW	18 kW



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