

# PRO-XS2, PRO-XS3

## High Selectivity Nanofiltration

The Hydranautics® PRO-XS series is a unique set of nanofiltration spiral wound membranes customized specifically for challenging industrial process applications. These membranes are based on Hydranautics high performance membrane products which have then been specially designed to treat a variety of challenging industrial feed streams including high fouling, high TDS, and having special ion separation requirements.

### Specified Performance\*

Model	Membrane Active Area	Feed Spacer	Permeate Flow	SO <sup>4</sup> Rejection
PRO-XS2	400 ft <sup>2</sup> (37 m <sup>2</sup> )	34 mil (0.86 mm)	11,000 gpd (41.6 m <sup>3</sup> /d)	99.7% (99.6% minimum)
PRO-XS3	400 ft <sup>2</sup> (37 m <sup>2</sup> )	34 mil (0.86 mm)	9,650 gpd (36.5 m <sup>3</sup> /d)	99.7% (99.6% minimum)

Test Conditions:

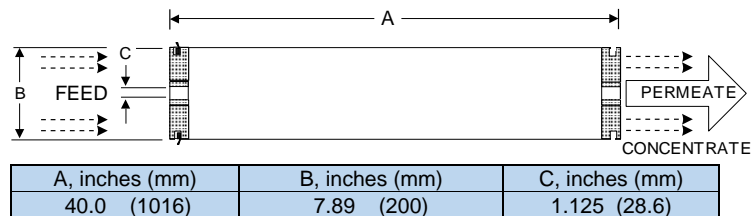
- 2000 ppm MgSO<sub>4</sub>
- 110 psig (0.76 MPa) Applied Pressure
- 77 °F (25 °C) Operating Temperature
- 15% Permeate Recovery
- 6.5– 7.0 Feed pH

\* The Specified Performance is based on data taken after a minimum of 10 minutes of operation. Actual testing of elements may be done at conditions which vary from these exact values; in which case, the performance is normalized back to these standard conditions. Permeate flow for individual elements may vary +/-20% from the value specified.

### General Product Description\*\*

Configuration: Spiral Wound  
 Membrane Polymer: Composite Polyamide

Packaging: All membrane elements are supplied with a brine seal, interconnector, and O-rings. Elements are enclosed in a sealed polyethylene bag containing less than 2% Safeguard® 100 as preservation solution, and then packaged in a cardboard box. For more Safeguard® 100 flushing instructions, please refer to Hydranautics TSB118.



\*\*Values listed are indicative, not specified. For more detailed specifications, see our Technical Service Bulletin documents or contact Hydranautics Technical Department.

### Product Use and Restrictions^

Maximum Applied Pressure: 600 psig (4.1 MPa) for PRO-XS2  
 1200 psig (8.3 MPa) for PRO-XS3

Maximum Chlorine Concentration: < 0.1 ppm

Maximum Operating Temperature: 113 °F (45 °C)

pH Range, Continuous (Cleaning): 3.0 - 9.0 (1.0 - 11.5)

Maximum Feedwater Turbidity: 1.0 NTU

Maximum Feedwater SDI (15 mins): 5.0

Maximum Feed Flow: 85 gpm (19.3 m<sup>3</sup>/h)

Minimum Brine Flow: 12 gpm (2.7 m<sup>3</sup>/h)

Maximum Pressure Drop for Each Element: 15 psi (0.10 MPa)

^ The limitations shown here are for general use. For specific projects, operating at more conservative values may ensure the best performance and longest life of the membrane. See Hydranautics Technical Bulletins for more detail on operation limits, cleaning pH, and cleaning temperatures.

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