VONTRON

Challenge Low-energy Consumption and Zero Emissions Driving Force for the Recycling of Resources

ZERO-FR10 Fouling Resistant

ZERO-FR10 element is one of the industry's most advanced fouling resistant element technology special designed for high TDS level 5000-15000 ppm, and high COD wastewater reclaiming in zero liquid discharge process. Base on the new generation of membrane separation layer technology and unique component structure, It is a low pressure drop, long cleaning cycle, high chemical cleaning resistance membrane element product.

Product Features

- New Generation of 330 nm Enhanced Separation Layer
- New Low Differential Pressure Technology 34mil LD Feed Spacer
- Permeate Flow Increased by 10%
- High-precision Rolling Technology
  Low Permeate Water Resistance Structure

Applications

- √ Reuse of High Salt and High COD Wastewater
- √ Primary Concentration and Reduction Stage of Zero Liquid Discharge Technology
- √ Suitable for TDS 5-15g/L of Feed Water

* Data from VONTRON Testing Center

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VONTRON **ZERO-FR10 Membrane Element**

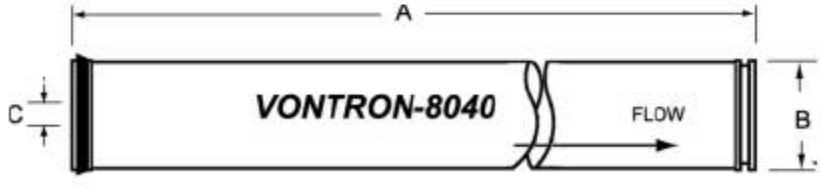
Brief Introduction

ZERO-FR10 element is one of the industry's most advanced fouling resistant element technology special designed for high TDS level 5000-15000 ppm, and high COD wastewater reclaiming in zero liquid discharge process. Base on the new generation of membrane separation layer technology and unique component structure, It is a low pressure drop, long cleaning cycle, high chemical cleaning resistance membrane element product.

Model	Active Membrane Area $ft^2(m^2)$	Permeate Flow $GPD(m^3/d)$	Stable Rejection %	Feed Spacer Thickness mil
ZERO-FR10	400(37.2)	11500(43.5)	99.7	34

Testing Position	Operating pressure 225psi (1.55MPa) Temperature at 25℃ Tested at 2000mg/L NaCl solution pH 7.0 ± 0.5 Recovery rate at 15%	
Operating Limit & Conditions	Maximum operating pressure	600psi（4.14MPa）
	Maximum feedwater flow	75gpm（$17m^3/h$）
	Maximum feedwater temperature	45℃
	Maximum feedwater flow SDI_{15}	5
	Allowed pH range for feedwater in operation	1～13
	Allowed pH range for chemical cleaning	2～11
	Maximum concentration of free chlorine	<0.1 mg/L
	Maximum pressure drop per element	15psi（0.1MPa）

Size of Membrane Element： 1.0 inch=25.4 mm



A/mm(inch)	B/mm(inch)	C/mm(inch)
1016 (40)	201 (7.9)	29 (1.125)

Notice:

1. All data and information provided in this manual have been obtained from long-term

experiment by VONTRON. We confirm the effective and accuracy of the data. VONTRON assumes no liability for any aftermath caused by user's failure in abiding by the conditions specified in this manual in use or maintenance of membrane products. It is strongly recommended that the user shall strictly abide the designed use and maintenance requirements and keep relevant records.

2. The permeate value listed in the table is the average value. The permeate flow of single membrane element is tolerance not exceeding ±20% of the nominal value.

3. All wet-type membrane elements have been strictly tested before leaving the factory, and have been treated with 1.0% sodium hydrogen sulfite (10% glycerin antifreeze required in winter) for storage purpose, then sealed with plastic bag in vacuum, and further packed in carton boxes.

4. The membrane used should remain wet after initial wetting; In long term suspension, to prevent the breeding of microbes, soak the membrane elements with protective solution is highly recommended, the solution (prepared with RO filtered water) containing 1.0% sodium hydrogen sulfite (foodstuff-purpose).

5. Operate low pressure flushing for 15-25 minutes of first use, high pressure flushing for 60-90 minutes when first use (Permeate volume no less than 50% of designed volume). Discard all the permeate and condensed water produced during the first one hour after system start-up.

6. During storage time and operation period, it is strictly prohibited to add any chemical medicament that may be harmful to membrane elements. In case of any violation in adding chemical medicament, VONTRON assumes no liability for any damages incurred.

7. Along with technical development and product renovation, all information will be subject to modification without prior notification. Please keep notice the website of VONTRON for any updates of the product.