

# SeaPRO Series 60 Hz

Seawater Desalination Machines 45,000 ppm NaCl  
20-60 gpm (4.5-13.6 m<sup>3</sup>/hr)

## Basic Features (BAS)

- GE Fanuc Quick Panel 6-inch, 6-inch color display, Primarily text operating screens, Touch-screen controls
- GE Fanuc Micro VersaMax, Communication: RS232/DH485, Analog output: 6 points
- 4-20 mA instruments displayed on instrument center
- Variable frequency drive (VFD) for high pressure pump
- Stand alone master control enclosure, skid mounted local control enclosure with terminal strips

## Premium Features (PRE)

- GE Fanuc QuickPanel 12-inch, 12-inch color display, Text and pictorial operating screens, Touchscreen controls
- GE Fanuc VersaMax Communication: RS232 /DH485/Ethernet, Analog output: 4 points
- 4-20 mA instruments on PanelView
- Primary and final pressure transmitters
- Variable frequency drive (VFD) for high pressure pump
- Automated valves and control for full permeate flush upon shut down
- Stand alone master control enclosure, skid mounted local control enclosure w/remote I/O

## Instrumentation

Flow Meters.....Permeate, concentrate  
Conductivity.....Permeate  
pH ..... Feed  
Pressure..... Pre-filter, post-filter, primary, final,  
permeate, concentrate,pump discharge  
(PRE Feature = Primary, Final transmitter)



## Instrumentation (continued)

Pressure Switch.....Feed, permeate, concentrate  
Instrument center ..... Thornton 770 MAX

## Options Available

- Allen Bradley control system
- Multi-Media filters
- Clean-in-Place (CIP) units
- Chemical feed systems

## Documentation Included

- Operation and maintenance manual
- Control narrative
- Drawings: piping and instrumentation, electrical and general dimensional

## Operating Parameters

Recovery.....35%  
Design temp. .... 77°F (25°C)  
Design Feed TDS..... 45,000 ppm NaCl  
Operating range ..... 35 to 85°F (1.6 to 29.4°C)  
Minimal inlet pressure .....30 psi (2 Bar)

## Materials of Construction

High-pressure piping..... Sch. 10, Duplex 2205  
Stainless Steel  
Low-pressure piping.....Sch. 80, PVC  
Frame.....Painted carbon steel  
Local Enclosure ..... FRP, NEMA 4X

a product of  
**ecomagination**<sup>SM</sup>



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*Materials of Construction (continued)*

Main Enclosure..... Painted carbon steel, NEMA 4  
 VFD Enclosure..... Painted carbon steel, NEMA 4  
 Clamps/fittings.....Zinc-plated

**Cartridge Filtration**

Housing material..... GRP (glass reinforced plastic)  
 Cartridge filter..... 5-micron nominal, ROsave.Zs

**Membrane Elements and Housings**

Style ..... Spiral-wound elements  
 Membrane type..... TFC HR (Polyamide)  
 Element Area..... 400 ft<sup>2</sup>  
 Average membrane flux..... 8-10 GFD  
 Housing material..... FRP, 80 Bar (1200 psi)  
 Housing closure type ... Ring and plate style closure



**SeaPRO Models**

MODEL	SeaPRO-8	SeaPRO-16	SeaPRO-28
Permeate rate:	28.8k gpd 20 gpm (4.5 m <sup>3</sup> /hr)	57.6k gpd 40 gpm (9.0 m <sup>3</sup> /hr)	86.4k gpd 60 gpm (13.6 m <sup>3</sup> /hr)
Concentrate Rate:	37 gpm (8.4 m <sup>3</sup> /hr)	74 gpm (16.8 m <sup>3</sup> /hr)	111 gpm (25.2 m <sup>3</sup> /hr)
Feed Rate:	57 gpm (12.9 m <sup>3</sup> /hr)	114 gpm (25.8 m <sup>3</sup> /hr)	171 gpm (38.8 m <sup>3</sup> /hr)
<b>Pumps and Motors</b>			
Model:	MSS 1537	MSS 2030	MSS 3030
Manufacturer:	GE Osmonics/FEDCO <sup>®</sup>	GE Osmonics/FEDCO <sup>®</sup>	GE Osmonics/FEDCO <sup>®</sup>
Quantity:	1	1	1
Motor HP and type:	40Hp (29.9 kW) TEFC	75 Hp (55.9 kW) TEFC	100 Hp (74.6 kW) TEFC
Design Flow Rate:	60 gpm (13.6 m <sup>3</sup> /hr)	115 gpm (26.1 m <sup>3</sup> /hr)	170 gpm (38.6 m <sup>3</sup> /hr)
Design boost pressure:	690 psig (47.6 Bar)	660 psig (45.5 Bar)	620 psig (42.7 Bar)
<b>Energy Recovery Booster</b>			
Model:	HPB 20	HPB 30	HPB 40
Manufacturer:	GE Osmonics/FEDCO <sup>®</sup>	GE Osmonics/FEDCO <sup>®</sup>	GE Osmonics/FEDCO <sup>®</sup>
Quantity:	1	1	1
Design boost pressure:	315 psig (21.7 Bar)	340 psig (23.4 Bar)	380 psig (26.2 Bar)
<b>Membrane Elements and Housings</b>			
Membranes quantity:	8	16	24
Memb. housing style:	4 element long, 4 port	4 element long, 4 port	4 element long, 4 port
Banking Arrangement:	2, parallel	4, parallel	6, parallel
<b>Cartridge Filtration</b>			
Cartridge Filter:	ROZs05-40XK	ROZs05-40XK	ROZs05-40XK
Filter Length:	40" (102 cm)	40" (102 cm)	40" (102 cm)
Filter Quantity:	6 per change out	10 per change out	22 per change out
<b>Installation and Utility Requirements</b>			
Inlet:	2.0" flange	3.0" flange	3.0" flange
Permeate:	1.0" flange	1.5" flange	2.0" flange
Concentrate:	1.5" flange	2.0" flange	3.0" flange
Inlet Water Pressure:	30 psig, minimum	30 psig, minimum	30 psig, minimum
Air Pressure:	100 psig, oil-free	100 psig, oil-free	100 psig, oil-free
Drain to be Sized for:	57 gpm (12.9 m <sup>3</sup> /hr)	114 gpm (25.8 m <sup>3</sup> /hr)	171 gpm (38.8 m <sup>3</sup> /hr)
Power:	230/460 VAC, 3-phase, 60Hz	230/460 VAC, 3-phase, 60Hz	230/460 VAC, 3-phase, 60Hz
Control Circuit:	120 VAC, 1-phase, 60Hz	120 VAC, 1-phase, 60Hz	120 VAC, 1-phase, 60Hz
<b>SeaPRO Skid</b>			
Height:	88" (224 cm)	88" (193 cm)	88" (224 cm)
Width:	52" (132 cm)	52" (117 cm)	52" (132 cm)
Depth:	199" (506 cm)	199" (506 cm)	199" (506 cm)
Weight Estimate for Shipping Purposes:	3400 lb (1542 kg)	4000 lb (1814 kg)	4500 lb (2041 kg)