

SeaPRO Series 50 Hz

Seawater Desalination Machines 45,000 ppm NaCl
100-300 m³/day (20-60 gpm)

Basic Features (BAS)

- GE Fanuc Quick Panel 6", 6-inch color display, Primarily text operating screens, Touchscreen 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" , 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 with remote I/O

Instrumentation

Flow Meters..... Permeate, concentrate
Conductivity..... Permeate
pH.....Feed



Instrumentation (continued)

Pressure Pre-filter, post-filter, primary, final, permeate, concentrate, pump discharge (PRE Feature= Primary, Final transmitter)
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

Recovery35%
Design temp..... 25°C (77°F)
Design Feed TDS.45,000 ppm NaCl
Operating range.....2 to 30°C (35 to 85°F)
Minimal inlet pressure 2 Bar (30 psi)

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

Membrane Elements and Housings

Style.....Spiral-wound elements
Membrane type.....TFC HR (Polyamide)
Element Area.....37.2 m²
Average membrane flux.....13.5-17 l/mh
Housing material.....FRP, 80 Bar (1200 psi)
Housing closure type.....Ring and plate style closure

Cartridge Filtration

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

SeaPRO Models

MODEL	SeaPRO-8	SeaPRO-16	SeaPRO-28
Permeate rate:	100 m ³ /day (18.3 gpm)	200 m ³ /day (36.7 gpm)	300 m ³ /day (55.0 gpm)
Concentrate Rate:	185 m ³ /day (33.9 gpm)	371 m ³ /day (68.1 gpm)	557 m ³ /day (102.2 gpm)
Feed Rate:	285 m ³ /day (52.3 gpm)	571 m ³ /day (104.8gpm)	857 m ³ /day (157.2 gpm)
Pumps and Motors			
Model:	MSS 1540	MSS 2030	MSS 3030
Manufacturer:	Osmonics/FEDCO [®]	Osmonics/FEDCO [®]	Osmonics/FEDCO [®]
Quantity:	1	1	1
Motor HP and type:	29.9 kW (40 Hp) TEFC	55.9 kW (75 Hp) TEFC	93.2 kW (125 Hp) TEFC
Design Flow Rate:	12 m ³ /hr (52.8 gpm)	24 m ³ /hr (105.7 gpm)	36 m ³ /hr (158.5 gpm)
Design boost pressure:	47.4 Bar (690 psig)	45.5Bar (660 psig)	42.7 Bar (620 psig)
Energy Recovery Booster			
Model:	HPB 20	HPB 30	HPB 40
Manufacturer:	Osmonics/FEDCO [®]	Osmonics/FEDCO [®]	Osmonics/FEDCO [®]
Quantity:	1	1	1
Design boost pressure:	21.7 Bar (315 psig)	23.4 Bar (340 psig)	26.2 Bar (380 psig)
Membrane Elements and Housings			
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
Cartridge Filtration			
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
Installation and Utility Requirements			
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:	2 Bar, minimum	2 Bar, minimum	2 Bar, minimum
Air Pressure:	7 Bar, oil-free	7 Bar, oil-free	7 Bar, oil-free
Drain to be Sized for:	285 m ³ /day (52.3 gpm)	571 m ³ /day (104.8gpm)	857 m ³ /day (157.2 gpm)
Power:	220/380 VAC, 3-phase, 50Hz	220/380 VAC, 3-phase, 50Hz	220/380 VAC, 3-phase, 50Hz
Control Circuit:	220 VAC, 1-phase, 50Hz	220 VAC, 1-phase, 50Hz	220 VAC, 1-phase, 50Hz
SeaPRO Skid			
Height:	224 cm (88")	224 cm (88")	224 cm (88")
Width:	132 cm (52")	132 cm (52")	132 cm (52")
Depth:	506 cm (199")	506 cm (199")	506 cm (199")
Weight Estimate for Shipping Purposes:	1542 kg (3400 lb)	1814 kg (4000 lb)	2041 kg (4500 lb)

