

# SeaPRO Series 50 Hz

## Seawater Desalination Machines

45,000 ppm NaCl 500-1500 m<sup>3</sup>/day (100-300 gpm)



### Basic Features (BAS)

- GE Fanuc Quick Panel 6-inch color display. Primarily text operating screens, Touchscreen controls.
- GE Fanuc Micro VersaMax processor
- 4-20 mA instruments displayed on instrument center
- Variable frequency drive (VFD) for high pressure pump
- Motor starter for boost pump
- Stand alone master control enclosure, skid mounted local control enclosure with terminal strips
- Membrane/energy recovery device (ERD)/boost pump and pump/prefilter located on separate skids

### Premium Features (PRE)

- GE Fanuc QuickPanel 12-inch color display. Text and pictorial operating screens. Touchscreen controls.
- GE Fanuc VersaMax processor
- 4-20 mA instruments on touchscreen
- Primary and final pressure transmitters
- Variable frequency drive (VFD) for high pressure pump
- Motor starter for boost pump
- Automated valves and control for feed flush upon shut down
- Stand alone master control enclosure, local control enclosure with remote I/O
- Membrane/energy recovery device (ERD)/boost pump and pump/prefilter located on separate skids

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## Operating Parameters

Design Feed TDS	45,000 ppm NaCl
Maximum Recovery	35%
Nominal Rejection	95-98%
Operating Temperature	1.6 to 29.4°C (35 to 85°F)
Minimum Inlet Pressure	2 Bar (30 psig)
Design Temperature	25°C (77°F)

## Instrumentation

Flow Meters.....	Permeate, concentrate, low pressure (LP) ERD inlet, high pressure (HP) ERD outlet
Conductivity.....	Permeate
pH .....	Feed
Pressure.....	Pre-filter, post-filter, primary, final, permeate, concentrate, LP ERD inlet, LP ERD outlet, HP ERD inlet, HP ERD outlet (PRE Feature= Primary, Final transmitter)
Pressure Switches.....	Feed, permeate, concentrate, primary
Instrument Center .....	Thornton 770 MAX

## Materials of Construction

Frame	Painted Carbon Steel
Cartridge Filter	RO.Zs 05-40, 5-micron nominal
Cartridge Filter Housing	GRP (glass reinforced plastic)
Membrane Elements	GE SW-RO-400-HR-WT
Membrane Housing	FRP
Low Pressure Pipe	Schedule 80 PVC
High Pressure Pipe	Duplex 2205
Enclosures	NEMA 4

## Options Available

- Allen Bradley control system
- Multi-Media filters
- Clean-in-Place (CIP) units
- Chemical feed systems
- Transfer pumps and storage tanks

## Documentation Included

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

## SeaPRO Models

MODEL	SeaPRO-42	SeaPRO-63	SeaPRO-84	SeaPRO-126
Permeate rate: Concentrate Rate: Feed Rate:	550 m <sup>3</sup> /day (100 gpm) 1,021 m <sup>3</sup> /day (186 gpm) 1,571 m <sup>3</sup> /day (286 gpm)	825 m <sup>3</sup> /day (150 gpm) 1,532 m <sup>3</sup> /day (279 gpm) 2,357 m <sup>3</sup> /day (429 gpm)	1,100 m <sup>3</sup> /day (200 gpm) 2,042 m <sup>3</sup> /day (371 gpm) 3,143 m <sup>3</sup> /day (571 gpm)	1,650 m <sup>3</sup> /day (300 gpm) 3,064 m <sup>3</sup> /day (557 gpm) 4,714 m <sup>3</sup> /day (857 gpm)
<b>Pumps and Motors</b>				
Manufacturer: Quantity: HP Pump HP and Type: Boost Pump HP and Type:	Fedco 2 75 kW (100 Hp) TEFC 7.5 kW (10 Hp) TEFC	Fedco 2 110 kW (150 Hp) TEFC 11.2 kW (15 Hp) TEFC	Fedco 2 150 kW (200 Hp) TEFC 14.9 kW (20 Hp) TEFC	Fedco 2 186 kW (250 Hp) TEFC 29.8 kW (40 Hp) TEFC
<b>Energy Recovery Booster</b>				
Model: Manufacturer: Quantity: Design Flow Rate:	PX-220 ERI 1 40.9 m <sup>3</sup> /hr (180 gpm)	PX-180 ERI 2 30.7 m <sup>3</sup> /hr (135 gpm)	PX-220 ERI 2 40.9 m <sup>3</sup> /hr (180 gpm)	PX-220 ERI 3 40.9 m <sup>3</sup> /hr (180 gpm)
<b>Membrane Elements and Housings</b>				
Membranes quantity: Memb. housing style: Banking Arrangement:	42 7 element long, 4 port 6, parallel	63 7 element long, 4 port 9, parallel	84 7 element long, 4 port 12, parallel	126 7 element long, 4 port 18, parallel
<b>Cartridge Filtration</b>				
Cartridge Filter: Filter Length: Filter Quantity:	RO.Zs05-40XK 40" (102 cm) 22 per change out	RO.Zs05-40XK 40" (102 cm) 54 per change out	RO.Zs05-40XK 40" (102 cm) 54 per change out	RO.Zs05-40XK 40" (102 cm) 108 per change out

MODEL	SeaPRO-42	SeaPRO-63	SeaPRO-84	SeaPRO-126
<b>Installation and Utility Requirements</b>				
Inlet:	4.0" flange	6.0" flange	6.0" flange	8.0" flange
Permeate:	3.0" flange	3.0" flange	3.0" flange	4.0" flange
Concentrate:	3.0" flange	4.0" flange	6.0" flange	6.0" flange
Inlet Water Pressure:	2 Bar, minimum	2 Bar, minimum	2 Bar, minimum	2 Bar, minimum
Air Pressure:	7 Bar, oil-free	7 Bar, oil-free	7 Bar, oil-free	7 Bar, oil-free
Drain to be Sized for:	1428 m <sup>3</sup> /day (261.9 gpm)	2,285 m <sup>3</sup> /day (419.2 gpm)	2,857 m <sup>3</sup> /day (524.1 gpm)	4,285 m <sup>3</sup> /day (786.1 gpm)
Power:	220/380 VAC, 3-phase, 50Hz	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	220 VAC, 1-phase, 50Hz
<b>SeaPRO Skid</b>				
Membrane/ERD Skid				
Height:	221 cm (87")	221 cm (87")	221 cm (87")	221 cm (87")
Width:	196 cm (77")	196 cm (77")	196 cm (77")	229 cm (90")
Depth:	823cm (324")	823cm (324")	823cm (324")	823cm (324")
Weight Estimate for Shipping Purposes:	3,725 kg (8,215 lb)	4,560 kg (10,055 lb)	5,560 kg (12,260 lb)	6,990 kg (15,410 lb)
Pump/Prefilter Skid				
Height:	257 cm (101")	257 cm (101")	257 cm (101")	257 cm (101")
Width:	196 cm (77")	196 cm (77")	196 cm (77")	196 cm (77")
Depth:	533 cm (210")	533 cm (210")	533 cm (210")	533 cm (210")
Weight Estimate for Shipping Purposes:	2,220 kg (4,895 lb)	2,670 kg (5,885 lb)	2,845 kg (6,270 lb)	3,220 kg (7,095 lb)
Membranes:	760 kg (1,680 lb)	1,140 kg (2,520 lb)	1,525 kg (3,360 lb)	2,285 kg (5,040 lb)

