

SeaPRO*-210

2500 m³/day seawater desalination machine

general features

- Major components skid-mounted for easy installation
- GE Fanuc¹ QuickPanel 12-inch color display and VersaMax processor
- 4-20 mA instruments on touchscreen
- Primary and final pressure transmitters
- Variable frequency drives (VFDs) for high pressure and boost pump
- Stand alone master control enclosure, local control enclosure with remote I/O
- Standard package includes pressure exchanger type energy recovery device (ERD)
- Includes cartridge filters and membranes

¹GE Fanuc is a trademark of General Electric Company

operating parameters

Recovery.....	35%
Design temp.....	25°C (77°F)
Operating range.....	15-32°C (59-90°F) ¹
Design Feed TDS	45,000 ppm NaCl
Nominal rejection	97-99%
Minimum inlet pressure.....	30 PSIG (2 bar)

¹ Varying the operating temperature may affect permeate rate

materials of construction

High-pressure piping	Duplex 2205
Low-pressure piping	Schedule 80 PVC
Frame	Painted blue carbon steel
Master Enclosure	NEMA 4 carbon steel

Table 2: Pump and Motor

HP Pump Model	MSS-16018
Manufacturer	Fedco
Quantity	1
HP Pump Motor	298 kW
Boost Pump Model	MSS-24001
Manufacturer	Fedco
Boost Pump Motor	30 kW
Quantity	1

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Membranes	AD-400
Membrane Housing.....	FRP, 1000 PSI (69 bar)
Cartridge Filters.....	5-micron nominal, ROsave.Zs*



Figure 1. SeaPRO-210 General Layout (reference only)

Table 1: Standard Instrumentation

Flow	Permeate, concentrate, low pressure ERD inlet, high pressure ERD outlet
Conductivity/ Temp	Permeate
Pressure Indicators	Pre-/post-filter, primary, final, permeate, concentrate, pre-/post-ERD, pump discharge
Pressure Switch	Feed, permeate, concentrate
Pressure Transmitter	Primary, final

Table 3: Energy Recovery

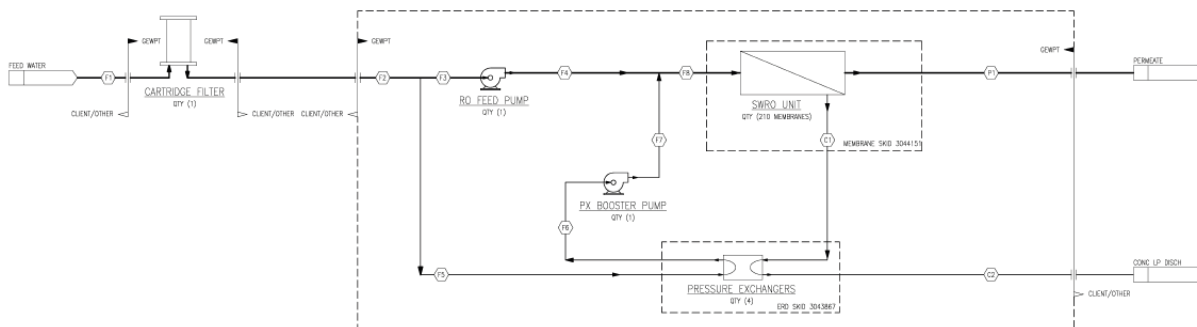
Model	PX-220
Manufacturer	Energy Recovery, Inc (ERI)
Quantity	4

options available:

- Sulzer or Danfoss Pumps
- Turbocharger or iSave ERDs

Table 4: Model SeaPRO-210 Specifications

Permeate rate:	2736 m ³ /day (504 gpm)
Concentrate Rate:	4128 m ³ /day (756 gpm)
Feed Rate:	6864 m ³ /day (1260 gpm)
Membrane Elements and Housings	
Membranes Quantity:	210
Memb. Housing Style:	7 element long, 3+4 ports
Banking Arrangement:	30, parallel
Cartridge Filtration	
Cartridge Filter:	RO.Zs 01-40
Filter Length:	40" (102 cm)
Filter Quantity:	120 per change out
Installation and Utility Requirements	
Inlet:	8" flange
Permeate:	6" flange
Concentrate:	8" flange
Air Pressure:	100 psig, oil-free
Power:	380/460 VAC, 3-phase, 50/60Hz
Control Circuit:	220 VAC, 1-phase, 50/60Hz


Figure 2. SeaPRO-210 Process Flow Diagram (reference only)