Biwater

Seawater Reverse Osmosis

(Skid Mounted)
500-1650 m³/day
(100-300 gpm)

'skid mounted reverse osmosis solution for all applications'

Basic Features (BAS)

- 4-20 mA instruments displayed on instrument centre
- Variable frequency drive (VFD) for high pressure pump
- 6-inch color display. Primarily text operating screens, Touchscreen controls
- GE Fanuc Micro VersaMax processor
- 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)

- 4-20 mA instruments on touchscreen
- 12-inch color display. Text and pictorial operating screens. Touchscreen controls
- GE Fanuc VersaMax processor
- 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

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

Construction Materials

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

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Options Available

- Allen Bradley control system
- Multi-Media filters
- Clean-in-Place (CIP) units
- Chemical feed systems
- Transfer pumps and storage tanks
- 60Hz or 50Hz Systems

Documentation Included

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

MODEL	SWRO-550	SWRO-1090	SWRO-1650
Permeate rate: Concentrate Rate: Feed Rate:	550 m³/day (100 gpm) 1,021 m³/day (186 gpm) 1,571 m³/day (286 gpm)	1,090 m³/day (200 gpm) 2,022 m³/day (371 gpm) 3,111 m³/day (571 gpm)	1,650 m³/day (300 gpm) 3,064 m³/day (557 gpm) 4,714 m³/day (857 gpm)
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 2 150 kW (200 Hp) TEFC 14.9 kW (20 Hp) TEFC	Fedco 2 186 kW (250 Hp) TEFC 29.8 kW (40 Hp) TEFC
Model: Manufacturer: Quantity: Design Flow Rate:	PX-220 ERI 1 40.9 m³/hr (180 gpm)	PX-220 ERI 2 40.9 m³/hr (180 gpm)	PX-220 ERI 3 40.9 m³/hr (180 gpm)
Membranes quantity: Memb. housing style: Banking Arrangement:	42 7 element long, 4 port 6, parallel	84 7 element long, 4 port 12, parallel	126 7 element long, 4 port 18, parallel
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) 108 per change out
Inlet: Permeate: Concentrate: Inlet Water Pressure: Air Pressure: Drain to be Sized for: Power: Control Circuit:	4.0" flange 3.0" flange 3.0" flange 2 Bar, minimum 7 Bar, oil -free 1428 m³/day (261.9 gpm) 220/380 VAC, 3 -phase, 50Hz 220 VAC, 1 -phase, 50Hz	6.0" flange 3.0" flange 6.0" flange 2 Bar, minimum 7 Bar, oil -free 2,857 m³/day (524.1 gpm) 220/380 VAC, 3 -phase, 50Hz 220 VAC, 1 -phase, 50Hz	8.0" flange 4.0" flange 6.0" flange 2 Bar, minimum 7 Bar, oil -free 4,285 m³/day (786.1 gpm) 220/380 VAC, 3 -phase, 50Hz 220 VAC, 1 -phase, 50Hz
Membrane/ERD Skid Height: Width: Depth: Weight Estimate for Shipping Purposes: Pump/Prefilter Skid Height: Width: Depth: Weight Estimate for Shipping Purposes: Membranes:	 221 cm (87") 196 cm (77") 823cm (324") 3,725 kg (8,215 lb) 257 cm (101") 196 cm (77") 533 cm (210") 2,220 kg (4,895 lb) 760 kg (1,680 lb)	 221 cm (87") 196 cm (77") 823cm (324") 5,560 kg (12,260 lb) 257 cm (101") 196 cm (77") 533 cm (210") 2,845 kg (6,270 lb) 1,525 kg (3,360 lb)	 221 cm (87") 229 cm (90") 823cm (324") 6,990 kg (15,410 lb) 257 cm (101") 196 cm (77") 533 cm (210") 3,220 kg (7,095 lb) 2,285 kg (5,040 lb)

Summary

Biwater AEWT's SWRO Series Reverse Osmosis Systems can either be designed and built as skid mounted units, or containerised units for fast and easy site installation.

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