

Sea Water RO Systems

AVRO SWRO-25 Series

The AVRO SWRO-25 series are available with capacities ranging from 1,500 LPD to 6,240 LPD. Designed to convert seawater to drinking water, these systems use our proven technology to give reliable performance and meet the demanding requirements of the marine environment. By using high quality reverse osmosis seawater membranes in the water purification process, the compact design makes the systems ideal for use on yachts, boats, cruise ships, and resorts.

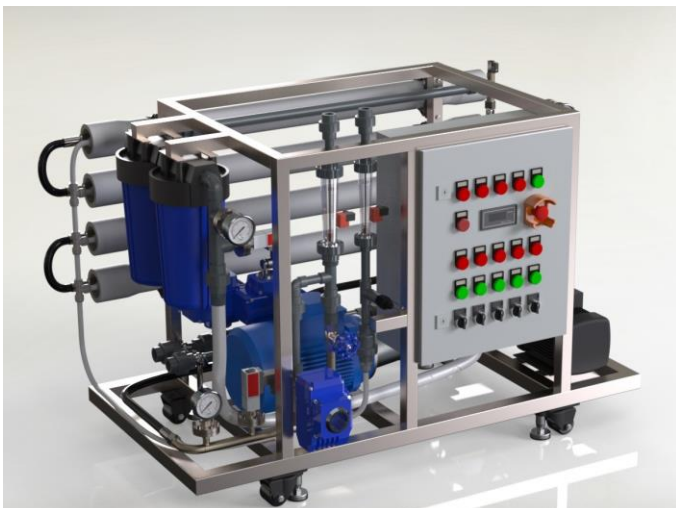
Features:

- Auto start-up flush
- Slow Start-up pressure build up
- Auto Shut-down fresh water flush
- Auto Shut-down pressure release
- RO low pressure/high pressure protection
- pumps and valves switching smoothly
- SS304 Skid with automobile grade coating
- SS304 control panel with automobile grade coating
- Auto and manual 2 modes operation
- With pulsation dampener
- Diaphragm isolation seals to protect pressure switches
- SS2205 & Flurorin Plastic Feed/Flush pump
- Permeate and concentrate water low flow protection



Benefits

- Fully Equipped and Customisable to your specification
- Factory Acceptance Test
- Expandable and Skid Mounted
- Low Operation and Maintenance Costs
- SS2205 valves, HP pipe Fittings
- Components Easily Accessible
- Easy Maintenance and Servicing
- Pre-Plumbed Wired and Assembled
- ISO9001 Manufacturing facility



Standard Specifications

Pre filter

- Housing --- 4.5" x 10"
- Quantity --- 2 pc
- Sediment filter --- 4.5" x 10"; 5 & 1 micron

Membrane Elements and Housings

- Membrane model --- SW30-2540
- Membrane manufacturer --- Various
- Housing Spec. --- FRP, 1000psi, Side port

Feed/flush Pump

- Pump Material --- SS2205/Flourin
- Pump Brand --- CNP

High Pressure Pump

- Pump Material --- SS316
- Pump Brand --- AR

Connection Port

- Feed Inlet Port
- Permeate Port
- Drain Port

Instrumentation

- Flow meters --- Permeate, concentrate
- Conductivity --- Permeate
- Pressure gauge --- Pre-filter, post-filter, pump discharge, concentrate
- Pressure switch --- Feed, RO membrane inlet

Options or Upgrades

- Timer and relay based control
- HMI Touch Panel
- Ethernet on-line monitor and control
- Anti-scalant Dosing System
- FRP control panel
- Out of specification permeate divert
- CAT HP Pump
- Clean-in-Place (CIP) ports
- Feed Water Conductivity Meter
- Additional Pretreatment System
- 316 Frame
- SS2507 High Pressure fittings

Control system

- Timer and relay-based control
- Timer adjustable
- Tank level control
- Low pressure/High pressure protection
- Auto feed water and freshwater flush

Motorized valve

- Feed Water Valve --- UPVC; 10bar
- Fresh Water Inlet Valve (for flush)---UPVC; 10 bar
- Fresh Flush outlet Valve (for flush)--- SS2205; 128bar

Material of Construction

- High - pressure pipeline --- SS2205 and flexible hose
- Low - pressure piping --- UPVC
- Frame --- SS304 Automobile grade coating
- Control box --- IP54 (SS304 Automobile grade coating)

Documentation Included

- Operation and maintenance manual
- Drawings: P&ID, Electrical diagram

Working Conditions

Maximum Feed Temperature °C (°F)	35 (95)	pH (Continuous)	4 ~ 9
Minimum Feed Temperature °C (°F)	5 (41)	Minimum pH (Continuous)	4
Maximum Feed Pressure bar (psi)	5 (72)	Free Chlorine	undetectable
Minimum Feed Pressure bar (psi)	2 (29)	Iron (ppm)	<0.1
Maximum TDS (ppm)	40000	Manganese (ppm)	<0.05
SDI	<5	Organic matter (ppm)	<1

MODEL	SWRO-25-400	SWRO-25-800	SWRO-25-1200	SWRO-25-1600
Feed Water TDS ¹	35000ppm	35000ppm	35000ppm	35000ppm
Nominal Permeate rate ²	0.07m ³ /hr	0.12m ³ /hr	0.16m ³ /hr	0.21m ³ /hr
	(up to 0.08m ³ /hr)	(up to 0.15m ³ /hr)	(up to 0.2m ³ /hr)	(up to 0.26m ³ /hr)
Nominal Permeate rate (GPD)	400	800	1200	1600
Nominal Permeate rate (M3/day)	1.5	3.0	4.5	6.0
Approximate Concentrate rate	0.82m ³ /hr	0.75m ³ /hr	0.7m ³ /hr	0.64m ³ /hr
Approx. Feed rate	0.90m ³ /hr	0.90m ³ /hr	0.90m ³ /hr	0.90m ³ /hr
Recovery Rate	7~9%	15~17%	21~23%	27~29%
Pump and Motor				
Manufacturer	Annovi Reverberi/ (or CCAT)			
Model	RK-SS15.15/ (Cat-317)			
Motor HP	2.2 kw			
Wet contact Material	SS316L/ (Cat-317: Nickle Aluminum Bronze)			
Design flow rate	15 Liters/min (Cat-317: 15 Liters/min)			
Max. Pump pressure	66.7bar			
Membranes Elements and Housings 2540				
Membranes quantity	1	2	3	4
Membrane housing quantity	1 (single element)	2 (single element)	3 (single element)	4 (single element)
Membrane housing array	1	1→1	1→1→1	1→1→1→1
Valves				
Motorized Feed valve	3/4" UPVC			
Motorized Flush water inlet valve (for flush)	3/4" UPVC			
Motorized Flush outlet valve	3/8" SS2205			
Concentrate valve	3/8" SS2205 ;adjustable			
Air release valve	3/8" SS2205;adjustable			
Installation				
Feed /flush Inlet	3/4"BSPT or NPT			
Permeate	3/8"BSPT or NPT			
Drain	3/8"BSPT or NPT			
Package Size				
Approx. Height	900mm			
Approx. Width	1200mm			
Approx. Depth	800mm			
Approx. Shipping Weight	90	98	106	115
Options				
Antiscalant Feed System	Metering pump: 1.5L/hr; Chemical tank: 60-100L			
CIP system	CIP tank: 80L; CIP pump: 1m ³ /h@3bar; CIP filter: 4.5"x10"BB			
Pretreatment:	As per request			

¹Treatment ability and working pressure of the RO system are dependent on feed water quality.

² Nominal permeate rate listed at temperature 25°C, Permeate rate can be reduced by up to 20% as temperature drops.

Specifications subject to change without notice

Martin Seawater RO Systems are available in a variety of voltages. Please select the desired voltage code as below. The three-digit code will be added to the end of the Seawater RO System Model number.

Example: SWRO-2000-116 = 110v/1ph/60Hz. Voltage Codes (available for all models):

-116 = 110V/1Ph/60Hz

-216 = 220-240V/1Ph/60Hz

-215 = 220-240V/1Ph/50Hz

-235 = 220-240V/3Ph/50Hz

-236 = 220V-240V/3Ph/60Hz

-335 = 380V-420V/3Ph/50Hz

Remark: All weights and dimensions are approximate. Other custom designs are available upon request