

Sea Water RO Systems

AVRO-SWRO-40 Series

AVRO-SWRO-40 series are available with capacities ranging from 7,200 LPD to 24,000 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 product water is used in a variety of areas including hotels, resorts, navy, and off-shore platforms, etc.

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 & Fluorin 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
- Components Easily Accessible
- Easy Maintenance and Servicing
- Pre-Plumbed Wired and Assembled
- SS2205 valves, HP pipe Fittings
- Manufacturing facility ISO9001



Standard Specifications

Pre filter

- Housing --- 4.5" x 20"
- Quantity --- 2 pc
- Sediment filter --- 4.5" x 20"; 5 & 1 micron

Membrane Elements and Housings

- Membrane model --- 4"-4040
- Membrane manufacturer --- Will fit various
- Housing Spec. --- FRP, 1000psi, Side port

Feed/flush Pump

- Pump Material --- SS2205 & Flurorine Plastic
- Pump Brand --- CNP

High Pressure Pump

- Pump Material --- SS316
- Pump Brand --- Annovi Reverberi

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 --- Pre and Post HP pump

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

Control system

- PLC Control
- Timer adjustable
- Tank level control
- Low pressure/High pressure protection
- Auto feed water and flesh water flush
- Unqualified water signal shut off function backup

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 (2507 option)
- 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)	40 (104)	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-40-2000	SWRO-40-3000	SWRO-40-4000	SWRO-40-6000
Feed Water TDS ¹	35000ppm	35000ppm	35000ppm	35000ppm
Nominal Permeate rate ²	0.3m ³ /hr	0.45m ³ /hr	0.6m ³ /hr	0.8m ³ /hr
	(up to 0.4m ³ /hr)	(up to 0.6m ³ /hr)	(up to 0.75m ³ /hr)	(up to 1m ³ /hr)
Nominal Permeate rate (GPD)	2000	3000	4000	6000
Nominal Permeate rate (M3/day)	8	12	15	22
Approximate Concentrate rate	2.2m ³ /hr	2m ³ /hr	1.9m ³ /hr	1.7m ³ /hr
Approx. Feed rate	2.5m ³ /hr	2.5m ³ /hr	2.5m ³ /hr	2.5m ³ /hr
Recovery Rate	10~16%	15~25%	20~30%	30~40%
Pump and Motor				
Manufacturer	Annovi Reverberi/ (or Cat)			
Model	XWL-SS42.15N/ (Cat-660)			
Motor HP	5.5kw			
Wet contact Material	SS316L/ (Cat-660: Nickle Aluminum Bronze)			
Design flow rate	42 Liters/min (Cat-660: 38 Liters/min)			
Max. Pump pressure	66.7bar			
Membranes Elements and Housings 4040				
Membranes quantity	2	3	4	6
Membrane housing quantity	2 (single element)	3 (single element)	4 (single element)	6 (single element)
Membrane housing array	1→1	1→1→1	1→1→1→1	1→1→1→1→1→1
Valves				
Motorized Feed valve	1" UPVC			
Motorized Flush water inlet valve (for flush)	1" UPVC			
Motorized Flush outlet valve	1/2" SS2205			
Concentrate valve	1/2" SS2205; adjustable			
Air release valve	3/8" SS2205;adjustable			
Installation				
Feed /flush Inlet	1"BSPT or NPT			
Permeate	1/2"BSPT or NPT			
Drain	1/2"BSPT or NPT			
Package Size				
Approx. Height	1350mm			
Approx. Width	1400mm			
Approx. Depth	800mm			
Approx. Shipping Weight	170kg	175kg	180kg	190kg
Options				
Antiscalant Feed System	Metering pump: 1.5L/hr; Chemical tank: 60-100L			
CIP system	CIP tank: 200L; CIP pump: 2m ³ /h@3bar; CIP filter: 4.5"x20"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.