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WatMan WATER RO SYSTEMS FOR DESALINATION



The WatMan reverse osmosis systems produce from 1 to 2000 m³ per day of high quality water suitable for communities, marine environment, boiler feed and general industrial applications. The systems can operate on a range of feedwater qualities at recoveries of up to 85 percent, and will remove up to 99,9 % of dissolved inorganics, organics, colloidal and suspended particulates. The WatMan RO systems come with a number of options and can be tailored to suit a customer's specific requirements.



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SPECIFIC FEATURES

Powder-coated mild steel skid	IP54 coated steel control panel
Antiscalant dosing system or water softeners	PLC by Omron, Siemens or Mitsubishi
Stainless steel cartridge filter	Operation panel
Low pressure feed pump	HP pump pressure switch
Multi-stage high pressure pump or Piston pump	Feed conductivity indicator
Side-entry RO vessels	Permeate conductivity indicator
ABS or PVC low pressure piping	Permeate flow indicator
Stainless Steel high pressure piping	Reject rotameter or flow indicator
CIP/Flush tank	Low noise reject control valve
Air operated valves	Feed temperature indication
Sampling points	Pressure gauges

AVAILABLE OPTIONS

Site tailored pre-treatment

- | | |
|--|--------------------------------|
| - Multi-media filtration | for suspended solids removal |
| - Activated carbon filtration or chemical dosing | for chlorine removal |
| - Micro or ultra filtration | |
| - Iron removal filtration | |
| - Chemical dosing | |
| - Polypropylene or coated filter housing | for high chloride applications |



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- Antiscalant low level alarm
- Variable Frequency Drive (VFD) for high pressure pump control
- RO Module inlet/outlet pressure transmitters
- Reject flow transmitter
- Reject recycle with flow rotameter or constant flow controls
- Remote monitoring facility
- Stainless steel skid frame
- Electrically controlled valves
- ASME certified pressure vessels
- 2-pass systems for high-purity applications
- Energy recovery for low-energy applications
- Fresh water remineralization or rehardening

PLANT SPECIFICATIONS

STANDARD EQUIPMENT

Low pressure pump	Centrifugal low pressure pump
Cartridge or Bag filter	Housing in stainless steel
Cartridge/Bag filter elements	Polypropylene (5 micron rating)
Antiscalant dosing pump	Solenoid-operated dosing pump
Antiscalant dosing tank	Polyethylene tank with level control
High pressure pump	Vertical or horizontal multistage centrifugal Piston pump Plunger pump
Pressure vessels	FRP or SS sideport with victaulic ports
Membrane elements	Spiral wound (high rejection, low pressure etc.)
CIP/Flush tank	Polyethylene
PLC Controller	Omron, Siemens or Mitsubishi
Operator Interface	Operation panel, PLC Interface or PC with process visualization
Permeate flow	Rotameter or flow transmitter
Permeate conductivity	EC transmitter with temperature compensation
Reject flow	Rotameter or flow transmitter
Pressure gauges	Glycerine-filled 50/100mm diameter
Reject throttling valve	Stainless steel angle seat globe valve Constant flow controls
Low pressure piping	ABS or PVC
High pressure piping	Stainless Steel (316 or High Grade)



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TERMINATION POINTS

Feed inlet	32...140 Flange ABS or PVC
Media filter inlet/outlet	32...140 Flange ABS or PVC
Permeate outlet/dump	32...100 Flange ABS or PVC
Reject outlet	32...100 ABS or PVC
Air supply	½”

UTILITY REQUIREMENTS

Power supply	230/380/400/440/460/ 690V
	50/60 Hz
	1/3 phase
Air supply	600 kPa instrument air

FEEDWATER REQUIREMENTS

Feedwater Pressure	Flooded Suction or 3-5 bar
Feedwater temperature	2 – 40 °C
Total Dissolved Solids	LP: up to 1,500 mg/L
	MP: up to 7,500 mg/L
	HP: up to 45,000 mg/L
Silt Density Index	Less than 5.0



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SYSTEM PERFORMANCE and DIMENSIONS

Model	Nominal Product Flow * (m ³ /day)	Max Recovery ** (LP/MP/HP)	Max Pressure (bar) (LP/MP/HP)	Max Power (kW) *** (LP/MP/HP)	Max Weight (kg)	Dimension [mm] HxWxD
RO100	2	75/60/45	12/30/65	1.5/1.5/1.5	80	1650x750x650
RO200	5	75/60/45	12/30/65	1.5/2.2/3.0	110	1650x750x650
RO500	10	75/60/45	12/30/65	2.2/3.0/5.0	160	1650x750*650
RO1000	20	75/60/45	12/30/65	3.0/5.0/10	260	1850x1000x1000
RO2000	40	75/60/45	12/30/65	3.0/10/15	500	1850x1000x1000
RO3000	60	75/60/45	12/30/65	5.0/12/22	1050	1750x2600x1000
RO5000	100	75/60/45	12/30/65	7.5/15/30	1300	1750x2600x1000
RO7500	150	75/60/45	12/30/65	10/20/45	1750	1750x2600x1000
RO10000	200	75/60/45	12/30/65	15/30/60	2250	1900x3600x1000
RO15000	300	75/60/45	12/30/65	18.5/40/90	2650	1900x3600x1000
RO20000	400	75/60/45	12/30/65	22/45/75	3100	2100x4600x1250
RO25000	500	75/60/45	12/30/65	30/55/90	3400	2100x4600x1250
RO30000	600	75/60/45	12/30/65	30/75/110	3700	2100x5600x1400
RO 40000	800	75/60/45	12/30/65	37/90/160	4250	2100x5600x1400
RO50000	1000	75/60/45	12/30/65	37/110/200	5100	2300x6600x1400
RO60000	1200	75/60/45	12/30/65	45/132/250	6050	2300x6600x1400
RO70000	1500	75/60/45	12/30/65	45/145/315	6900	2300x6600x1400

NOTE:

LP: Low Pressure; MP: Medium Pressure; HP: High Pressure Seawater Desalination

**: Nominal product flow rates are based on feed temperatures of 10^o C (LP/MP) or 25^o C (HP)*

*** : Recovery rates greater than informed are achievable. Operating conditions should be verified by WatMan.*

****: Max. power is for your information only. Actual guarantee values are given case-by-case.*

We reserve the right to change the above data without notification of such changes being made.

For more information, please, contact

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