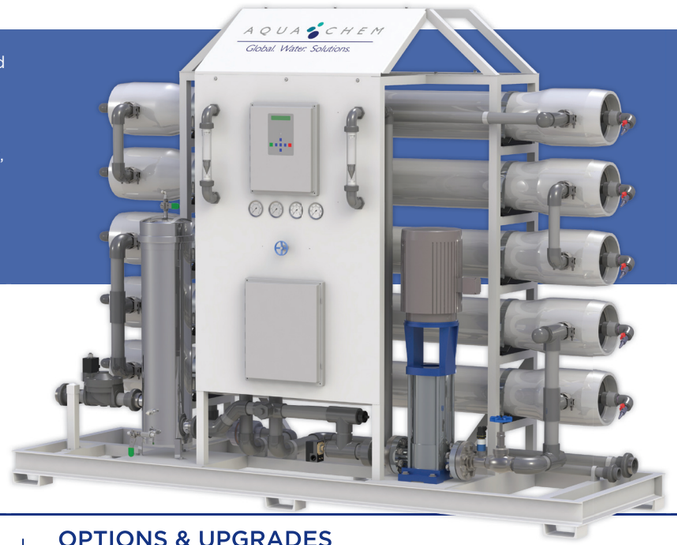
ACX1-SERIES

REVERSE OSMOSIS SYSTEMS

ACX1-Series Reverse Osmosis Systems are designed as a cost-effective solution to the growing demand of tap water and well water for applications in food & beverage, pharmaceutical, agriculture, chemicals, microelectronics, healthcare, and power. The smart, clean, and utilitarian design of the ACX1-Series allows for convenient installation, user-friendly operation, and ease of maintenance.



STANDARD FEATURES

- AI Concentrate Recycle Flow Meter[1]
- Chemical Feed Port[5]
- Chemical Feed Power Outlet[5]
- Clean-In-Place Ports[1]
- Composite Feed Solenoid Valve[4]
- Extra-Low Energy Membrane Elements
- Feed and Permeate TDS[5]
- Feed Solenoid Valve w/ Manual Bypass[1]
- Fiberglass Membrane Housings
- FSI 5 Micron Filter Bag[5]
- FSI Bag Filter Housing w/ Stainless Steel Stand[5]
- Low and High Pressure Switches
- Motorized Feed Valve[6]
- Multi-Cartridge Stainless Steel Filter Housing[5]
- Permeate and Concentrate Rotameters[2]
- Permeate and Concentrate Digital Paddle[6]
- Permeate Sample Ports
- Powder Coated Aluminum Frame[1]
- Power Coated Carbon Steel Frame[5]
- Pre-Filter and Post-Filter Pressure Gauges
- Pump Pressure and Concentrate Pressure Gauges
- Rotrol II Computer Controller[3]
- S-150 Computer Controller[2]
- S-200 Computer Controller w/ VFD[6]
- Sch80 PVC Piping[5]
- Stainless Steel Globe Valves[2]
- Vertical Multi-Stage Stainless Steel Pump
- Victaulic Style Fittings[1]

OPTIONS & UPGRADES

- Blending Valve[8]
- Chemical Feed System[10]
- Chemical Pump Outlet[8]
- Clean-in-Place (CIP) Valves[10]
- Clean-In-Place Skid-Mounted System[10]
- Concentrate Recycle Loop w/ Flow Meter[10]
- Filmtec LCLE Membrane Elements[8]
- Filmtec LCHR Membrane Elements[8]
- HF5 Ultra-Low Energy Membrane Elements[8]
- High Pressure Tank Switch[8]
- Motorized Feed Valve[9]
- NF3 Nanofiltration Membrane Elements[8]
- NF4 Nanofiltration Membrane Elements[8]
- Permeate Divert Valve
- Permeate Flush[10]
- pH and/or ORP Sensor
- Programmable Logic Controller w/ Touch Screen[10]
- Pump Pressure Relief Valve*
- Rotor II Controller Feed TDS Sensor[8]
- Rotrol II pH Monitoring[8]
- Rotrol II ORP Monitoring[8]
- S-150 Dual TDS Board[7]
- S-150 Expander Board[7]
- S-200 Computer Controller[9]
- Variable Frequency Drive*
- VFD[9]

[1]Standard on Models ACX1-12000, ACX1-18000, ACX1-24000, ACX1-30000
[2]Standard on Models ACX1-12000, ACX1-18000, ACX1-24000, ACX1-30000, ACX1-43200, ACX1-57600, ACX1-72000
[3]Standard on Models ACX1-30000
[4]Standard on Models ACX1-43200, ACX1-57600, ACX1-72000
[5]Standard on Models ACX1-43200, ACX1-57600, ACX1-72000, ACX1-115200, ACX1-144000, ACX1-180000
[6]Standard on Models ACX1-115200, ACX1-144000, ACX1-180000
[7]Option Available on Models ACX1-12000, ACX1-18000, ACX1-24000
[8]Option Available on Models ACX1-12000, ACX1-18000, ACX1-24000, ACX1-30000
[9]Option Available on Models ACX1-43200, ACX1-57600, ACX1-72000. Standard on larger models.
[10]Option Available on Models ACX1-43200, ACX1-57600, ACX1-72000, ACX1-115200, ACX1-144000, ACX1-180000
[11]Option Available on Models ACX1-115200, ACX1-144000, ACX1-180000
*Standard for all 50Hz systems.

MODELS	ACX1-12000	ACX1-18000	ACX1-24000	ACX1-30000	ACX1-43200	ACX1-57600	ACX1-72000	ACX1-115200	ACX1-144000	ACX1-180000
DESIGN										
System Capacity[1] gpd (m³/day)	12,000 (45)	18,000 (68)	24,000 (90)	30,000 (113)	43,200 (163)	57,600 (218)	72,000 (273)	115,200 (436)	144,000 (545)	180,000 (681)
Configuration[1]	Single Pass									
Feed Water Source[2]	TDS < 2,000 ppm									
Std Recovery Rate[3]	50-75%				70%	75%	70%	75%		
Recovery w/ Concentrate Recycle gpm[2]	-				80%					
REJECTION AND FLOW RATES										
Nominal Salt Rejection	99%				99.3%					
Permeate Flow[1] gpm (Lpm)	8.3 (31.6)	12.5 (47.3)	16.7 (63.1)	20.8 (78.9)	30 (113.4)	40 (151.2)	50 (189.0)	80 (302.4)	100 (378.0)	125 (472.5)
Min Concentrate Flow gpm (Lpm)	-				14 (53)					
CONNECTIONS										
Feed (in)	1.5 FNPT				2 FNPT			3 FNPT		
Permeate (in)	1 FNPT			1.5 FNPT	2 FNPT			2.5 FNPT	3 FNPT	
Concentrate (in)	1 FNPT			1.5 FNPT	1.25 FNPT			1.5 FNPT	2 FNPT	
Clean-In-Place Port (in)	1 FNPT				1.5 FNPT			2 FNPT		
Chemical Feed Port (in)	-				0.5 NPT					
MEMBRANES										
Membranes Per Vessel	2							4		
Membrane Quantity	8	12	16	20	6	8	10	16	20	24
Membrane Size	4040				8040					
VESSELS										
Vessel Array	1:1:1:1	2:2:1:1	3:3:2	3:3:2:2	1:1:1	1:1:1:1	2:1:1:1	2:1:1	3:1:1	3:2:1
Vessel Quantity	4	6	8	10	3	4	5	4	5	6
PUMPS										
Pump Type	Vertical Multi-Stage Centrifugal Pump									
Motor HP (kW)	3		5	7.5	10 (7.5)			15 (11)	20 (11)	20 (11)
RPM @ 60 Hz	3450				-					
RPM @ 50 Hz	VFD @ 60 Hz				-					
ELECTRICAL										
Standard Voltage	220V 60Hz 1Ph		220V 60Hz 3Ph							
Voltage Options	220V 50Hz 1Ph 220V 50Hz 3Ph 220V 60Hz 3Ph 460V 60Hz 3Ph		220V 50Hz 3Ph 460V 60Hz 3Ph		-					
SYSTEM DIMENSIONS[6]										
L x W x H (in/cm)	31 x 100 x 64 (78 x 254 x 162)				112 x 35 x 85 (284 x 89 x 216)					
Weight (lb/kg)	1060 (481)	1150 (520)	1260 (572)	1350 (612)	1,435 (651)	1,585 (719)	1,735 (787)	2,275 (1,032)	2,645 (1,200)	2,910 (1,320)

OPERATING LIMITS			
Design Temperature (°F/°C)[1]	77 (25)	Maximum Turbidity (NTU)[1]	0
Maximum Feed Temperature (°F/°C)[1]	85 (29)	Maximum Free Chlorine (ppm)	0
Minimum Feed Temperature (°F/°C)[1]	50 (10)	Maximum TDS (ppm)[4]	3,000
Maximum Ambient Temperature (°F/°C)	120 (48.9)	Maximum Hardness (gpg)[4]	0
Minimum Ambient Temperature (°F/°C)	40 (4.4)	Maximum pH (Continuous)	11
Maximum Feed Pressure (psi/bar)	85 (5.9)	Minimum pH (Continuous)	3
Minimum Feed Pressure (psi/bar)	45 (3.1)	Maximum pH (Cleaning 30 Min.)	12
Maximum Piping Pressure (psi/bar)	230 (16)	Minimum pH (Cleaning 30 Min.)	2
Maximum SDI Rating (SDI)	< 3	Maximum Turbidity (NTU)[4]	Up to 1

[1]Product flow and recovery rates are based on feedwater conditions of 2000 ppm TDS at 77°F. Treatment ability of the RO system is dependent on feed water quality. Higher TDS and/or lower temperatures will reduce product flow. An Aqua-Chem Applications Engineer can rate the units for these other feed water conditions. [2]A concentrate recycle loop is available as an option to increase recovery to 75 to 80% (if suitable to feed water conditions). [3]Other voltage options are available. [4]Appropriate filtration must be installed in order to prevent premature membrane fouling. [5]Scale prevention measures must be taken to prolong membrane life. [6]Does not include operating space requirements.