

BRACKISH WATER RO SYSTEMS LARGE SERIES

Ref: LBWRO-0430



Fig1: MSWRO-0430 Similar System in container

DESCRIPTION:

Single pass, single stage, ten (10) pressure vessels total. Each pressure vessel contains six (6) thin-film composite elements in series for a total of sixty (60). System produces 1630 m³/day (430,000 GPD or 300 gpm) of product water at 75% recovery.

OPERATING PARAMETERS:

TDS	500-550 mg/l (as NaCl)
SDI 15	< 3.0
Temperature	25 to 35°C (77 to 95°F)
Recovery	70 to 75%
Nominal Rejection	>98%
Incoming Power	460V 60Hz
Power Consumption	0.6-0.7 Kwhr/KGal

Note: Required 3bar (45psi) minimum customer supplied pressure to high pressure RO Feed Pump.
Temperatures and high salinities will reduce system productivity.

GENERAL FEATURES:

This specification defines the integrated design requirements for the Advanced Equipment and Services Brackish Water Reverse Osmosis Systems – Large Series for the Industrial, Commercial and Municipal markets.

All required equipment for independent operation is provided given the necessary pretreatment precautions taken.

Design basis includes system with centrifugal pump as well as cartridge filter system.

Although this configuration is based on a skid mounted system, Containerized and Solar options are available upon request. Custom configurations also available based on customer specific needs.

COMPONENTS:

- Skid designed for oversea transportation
- High Pressure Centrifugal RO Feed Pump w/ 220/460V 3 phase 50/60 Hz TEFC motor
- Energy Recovery Device Turbo Charger upon request
- VFD for RO Pump
- Digital flowmeters
- PLC
- Pressure transducer: High and low
- Isolation butterfly valves
- Integral permeate flush and CIP system optional

CONTROL AND POWER:

- PLC with Ethernet card and spare cards
- 6-inch HMI
- Remote start/stop & alarm capabilities
- Zero recovery flush on shutdown
- Power: 460V, 3 phase, 60Hz
- Remote control and monitoring

Features and Benefits

INSTRUMENTS:

Conductivity	Permeate product
Flow meters digital	Reject and Permeate
Pressure transducers	RO Feed and Discharge RO pump
Pressure gauges	Liquid filled for high & low pressures

MEMBRANE AND HOUSINGS:

- Multi Ported FRP pressure vessel design, 300psi rated
- Spiral wound thin film composite membranes 98% nominal salt rejection.

MATERIALS OF CONSTRUCTION:

Power Distribution Panels	NEMA 12
Control Enclosure	NEMA 12
High pressure piping	316SS
Low pressure piping	PVC Sch 80
High Pressure Tubing	Parflex
Low Pressure Tubing	Polyethylene
Pressure vessel rack	AL – Powder coated
Multimedia Filters	FRP - optional
PVC Sample Valves	On each vessel, feed, permeate and reject

OPTIONALS:

- ASME Code stamped pressure vessels
- Post-treatment degasifier
- 400 V, 3 Ph, 50 Hz fuse, A/C, Lighting kit
- pH meter and H₂SO₄ chemical feed
- NaOCl pretreatment chemical feed
- SBS chemical feed
- Installation and commissioning
- Supervision/services are available



Fig2: Remote control and monitoring feature

ALARMS:

- Low pump suction pressure
- High pump pressure discharge
- Permeate water quality
- Low permeate flow
- High permeate flow
- Low reject flow
- Low/high voltage
- Phase protection
- Pump motor overload
- High membrane feed pressure
- Chemical tank protection level

PHYSICAL DATA & DIMENSIONS:

Dry Weight	8700 lbs
Operating Weight	11,900 lbs
Dimensions	280" x 80 x 50"
Piping Connections	
Feed	6"
Permeate	4"
Reject	3"
Power Consumption	0.6 - 0.7 Kwh/1000 Gallons