

SEAWATER DESALINATION SYSTEMS MEDIUM SERIES - CONTAINERIZED

Ref: MSWRO-0030C

GENERAL FEATURES:

This specification defines the integrated design requirements the Advanced Equipment and Services Seawater Desalination Systems – Containerized Medium Series for the Industrial, Commercial and Municipal markets.

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

Design basis includes containerized system with duplex centrifugal pump as well as a containerized media filter and cartridge filter system.

Custom configurations also available based on customer specific needs.

COMPONENTS:

- Container 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
- VFD for RO Pump & RO Feed Pump
- Digital flowmeters
- PLC
- Pressure switches: High and low
- Isolation butterfly valves
- Integral permeate flush and CIP system

CONTROL AND POWER:

- PLC with Ethernet card and spare cards
- 6-inch HMI
- Remote start/stop & alarm capabilities
- Zero recovery flush on shutdown
- Power: 220/460V, 3 phase, 50/60Hz
- Remote control and monitoring

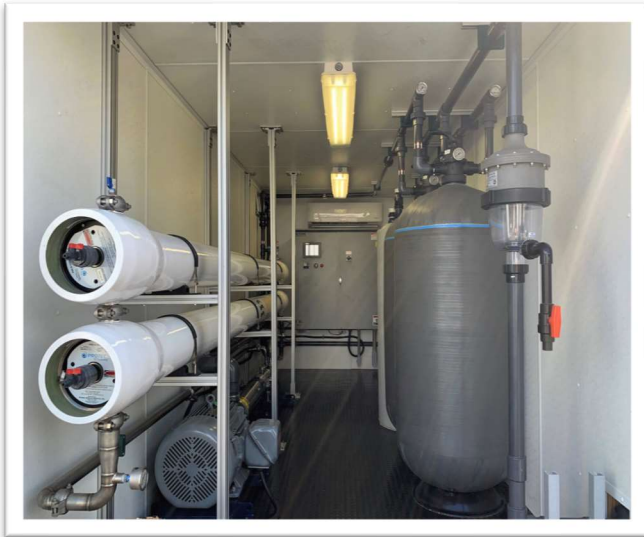


Fig1: MSWRO-0030C

DESCRIPTION:

Single pass, single stage, four pressure vessels total. Each pressure vessel contains 4 thin-film composite elements in series for a total of 8 (eight). System produces 115 m³/day (30000 GPD or 20.8 gpm) of product water at 45% recovery.

OPERATING PARAMETERS:

TDS	37,000-45,000 mg/l (as Naci)
SDI 15	< 3.0
Temperature	25 to 35°C (77 to 95°F)
Recovery	40 to 45%
Nominal Rejection	>98%
Incoming Power	220/460V 60/50Hz
Power Consumption	10 - 14 Kwhr/KGal

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

Features and Benefits

INSTRUMENTS:

Conductivity	Permeate, Final product
Flow meters digital	Feed and permeate
Pressure switch	RO Feed and Discharge pump
Pressure gauges	Liquid filled for high and low pressures

MEMBRANE AND HOUSINGS:

- Multi Ported FRP pressure vessel design, 1000psi 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	Super Duplex
Low pressure piping	PVC Sch 80
High Pressure Tubing	Parflex
Low Pressure Tubing	Polyethylene
Pressure vessel rack	Marine-anodize-Aluminum
Multimedia Filters	FRP
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
- Flush storage tank level protection

PHYSICAL DATA & DIMENSIONS:

Dry Weight	16500 lbs (7484Kg)
Dimensions	240" x 96" x 96"
Piping Connections	
Feed	2"
Permeate	1-1/2"
Reject	1-1/2"
Power Consumption	10 - 14 Kwh/1000 Gallons