

## SEAWATER DESALINATION REVERSE OSMOSIS SYSTEM



Skid mounted or containerised reverse osmosis desalination plants that are able to produce fresh water for potable or technical purposes.

Seawater reverse osmosis desalination plants are designed to produce drinking water (salt content less than 500 ppm) from a seawater feeding with salinity up to 55000 ppm and capacity up to 5000 m<sup>3</sup>/day.

The end user shall only connect seawater feeding header, product water outlet header and brine outlet.

The plant is fully automatic to ease the operation of the end user.

All the materials are selected to guarantee the longest lifetime of the package and to minimize the routine maintenance; as an example, the seawater pipes under high pressure are manufactured in Duplex stainless steel, while those under low pressure are made in atoxic PVC.

Each reverse osmosis plant is equipped with CPI (Clean In Place) system for periodical membrane cleaning.

## **STANDARD FEATURES**

- Seawater feed pump
- Dual media filter/filters
- 5 micron cartridge filter/filters
- 8" FRP membrane housing 1000 psi
- High rejection seawater membranes
- Duplex stainless steel high pressure piping
- PVC low pressure piping
- High pressure pump in duplex stainless steel
- High pressure pump controlled by VFD
- Energy recovery device (turbocharger)
- Permeate remineralization
- Membrane automatic flushing system
- Chemical cleaning system
- PLC control
- Heavy duty steel frame

## **SC/OS SERIES**

Skid-mounted heavy duty seawater desalination packages for ships and offshore platforms.

## **OPTIONS**

- Energy recovery with pressure exchangers
- Chemical conditioning systems
- Configuration for hazardous areas
- Containerized version
- UF pre-treatment
- Skid customization according to the available space for installation

**PUMP OUT & TREATMENT UNITS FOR  
 WASTE WATERS IN PORTS & MARINAS**

## DESIGN CONDITIONS

- Design seawater salinity: 37500 ppm or 45000 ppm
- Minimum seawater temperature: 10°C
- Maximum seawater temperature: 30°C
- SDI < 5

MODEL	SW100	SW200	SW250	SW350	SW500	SW1000
Permeate flow (m3/day):	100	200	250	300	500	1000
Feed flow (m3/hour):	9,3	18,5	23,15	34,71	46,30	92,60
Concentrate flow (m3/hour):	5,13	10,15	12,72	20,15	25,45	51,00
			<b>Membrane elements and Vessels</b>			
Vessel quantity:	1	3	3	4	5	10
No. elements:	6	6	6	6	6	6
			<b>High Pressure feed pump</b>			
Type:	Positive displacement	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
Manufacturer:	Interpump or Danfoss	FEDCO	FEDCO	FEDCO	FEDCO	FEDCO
Motor kW	18,5	37	45	55	90	160
			<b>Energy Recovery Device</b>			
Type:	Turbocharger	Turbocharger	Turbocharger	Turbocharger	Turbocharger	Turbocharger
Manufacturer:	FEDCO or PEI	FEDCO or PEI	FEDCO or PEI	FEDCO or PEI	FEDCO or PEI	FEDCO or PEI
			Cartridge filter			
Filter quantity:	1	1	1	2	2	4
Cartridge quantity each:	1	1	1	1	1	1
			<b>Installation and utility requirements</b>			
Inlet:		DN50	DN50	DN80	DN80	DN100
Permeate:		DN40	DN40	DN50	DN65	DN80
Concentrate:		DN40	DN40	DN50	DN80	DN100
Inlet water pressure (bar)	2	2	2	2	2	2