

**INDRO**<sup>®</sup>

## Packaged Reverse Osmosis Systems

An economical way to obtain pure water from brackish water

Scarcity of good quality water has increased our dependence on ground water sources. This brackish or saline water is unfit for drinking or for industrial use unless properly treated. Reverse osmosis, a membrane desalination process increasingly used worldwide, purifies brackish water for drinking and industrial purposes.

Reverse osmosis membrane technology produces water with very low dissolved solids and which is also free from particulate, colloidal and organic matter.

### Features

- Compact unit with robust mild steel powder coated frame.
- Efficiency: Removes upto 95% of total dissolved solids (TDS) or salinity to produce water that is clear and pleasant to taste.
- Range of models with capacities from 400l/h upto 3000 l/h
- Built in safety features to protect high pressure pump & membranes.
- Capable of handling waters with TDS levels between 1500 to 2500 ppm depending on the model.
- Fully assembled and tested before despatch
- On-line device to monitor treated water quality

### Advantages

- The most economical & efficient method of dissolved solids removal.
- Easy to start up and uses very little space on installation
- Can handle fluctuations in feed water total dissolved solids
- Easy availability of spares and services
- Short delivery periods



### Applications

- Hygienic drinking water for hotels, restaurants, hospitals and residences
- Mineral water plants
- High purity water for hospitals for use in dialysis units
- As retrofit to demineralisation plants in industries to reduce regeneration chemicals

## Technical Data

Model	802	803
Average Product Flow (l/h)	2000	3000
Average Recovery (%)	60	60
Maximum Permissible TDS in feed (ppm)	2500	2500
Average TDS Removal (%)	Between 90 to 95	
Minimum Feed Pressure required at Pump inlet (kg/cm <sup>2</sup> )	Not less than 1.0	
Power Supply	415 V 50 Hz	415 V 50 Hz
Drive Motor (hp/rpm)	7.5/2900	

### Dimensions

Width (mm)	1500	1500
Depth (mm)	1100	1100
Height (mm)	2100	2100

To the best of our knowledge the information contained in this publication is accurate. Ion Exchange (India) Ltd. maintains a policy of continuous development and reserves the right to amend the information given herein without notice. Please contact our regional offices for current product specifications.

**INDION** is the registered trademark of Ion Exchange (India) Ltd.



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## INDION®

### Reverse Osmosis Systems

The INDION series of reverse osmosis systems provide proven, highly reliable and cost effective treatment of a wide range of brackish waters. Designed with flexibility in mind, the series utilise state-of-the-art spiral wound reverse osmosis membranes to suit a given application. These systems can remove 90-98% of total dissolved salts with minimum instruments and controls.

#### Special Features

- Product flow rate 1.2 - 60 m<sup>3</sup>/h.
- Salt rejection ranges from 90 - 98% depending upon feed water composition.
- Product recovery ranges from 50 - 80% based on feed water composition.
- Electrical 415 V, 3 ph, 50 Hz.
- Concentrate discharge directed to drain at 'O' psi.
- Possible to hook up sophisticated instruments and controls

#### Advantages

- Modular design - capacity can be increased to suit requirements.
- Fully assembled skid, tested prior to shipment, ease of installation and beneficial use.
- Non-corrosive low pressure piping - virtually maintenance free.
- Low on energy consumption.
- User friendly unit - does not require continuous monitoring.

#### Applications

- Ultra pure water for electronic industries
- Ultrapure water for pharmaceutical industries
- Process water for manufacturing plants
- Boiler feed water
- Beverage and food processing industry
- Drinking water
- Waste water



- Bio-technology
- Mineral water

#### Specifications

- Poly propylene cartridge housing pre-filter.
- FRP pressure vessels.
- Spiral wound membrane elements of polyamide type.
- 16 stainless steel multistage pump.
- TEFC pump motor.
- 316 stainless steel high pressure piping
- Low feed pressure switch for pump protection.
- High feed pressure switch for membrane & pump protection.
- Motor starter with disconnect switch.
- Motor contactor with thermal overload protection.
- Sample valves for feed, product and concentrate.
- Concentrate check valve.
- Product check valve.
- Automatic feed shut-off valve.
- Cleaning connections.
- Full control panel instrumentation.
- Pump discharge pressure indicator.
- Feed and concentrate pressure indicator.
- Product and concentrate flow meters.
- Conductivity meter.
- Power on light.
- Fault alarm.
- Post shutdown system flush.

## Technical Data

Model	4" Membrane Series	8" Membrane Series
Flow Rates (m <sup>3</sup> /h)	1.2 – 5.0	2.0 – 60.0
Product Recovery	←————→	50 to 80% —————→
Salt Rejection	←————→	90 to 98% —————→
Membrane Type	←————→	Polyamide —————→
Plant Dimensions (Overall size)		
Length (mm)	4665	7500
Width (mm)	915	1651
Height (mm)	1935	2005

### Feed water requirements

- Temperature 40°C maximum
- Pressure 2 – 3 kg/cm<sup>2</sup> (30 – 45 psi)
- Salinity : upto 5000 ppm Total Dissolved Solids (TDS). For higher values contact us for advice.
- Silt Density Index (SDI) < 4.0
- Oil and Grease – Absent
- Iron & Manganese 0.1ppm, maximum (total)
- pH 4 –10.

### Options

- pH monitor/controller
- Chemical feed systems
- Pre – treatment system
- Clearing system
- Post treatment system
- SS 316 Housing pre - filter

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