

**SYDROS Desal - 250**



**TECHNICAL DATA SHEET**

**250 LPH Seawater Reverse Osmosis Plant (SWRO)**

**0.25 m<sup>3</sup>/h – Industrial Desalination System**

**1. System Overview**

Parameter	Specification
<b>System Type</b>	Seawater Reverse Osmosis (SWRO)
<b>Nominal Capacity</b>	250 L/h
<b>Configuration</b>	Single membrane system
<b>Design</b>	Skid-mounted, corrosion-resistant stainless steel frame
<b>Operation</b>	Continuous industrial duty

**2. Performance Data**

Parameter	Value
<b>Permeate Flow Rate</b>	250 L/h (±15%)
<b>Daily Production</b>	Up to 6.0 m <sup>3</sup> /day
<b>Recovery Rate</b>	35–45% (seawater dependent)
<b>Salt Rejection</b>	≥ 99.2%
<b>Feed TDS (max.)</b>	35,000 ppm
<b>Permeate TDS</b>	< 500 ppm
<b>Design Conditions</b>	25°C / 35,000 ppm TDS

### 3. Membrane Section

Parameter	Specification
<b>Membrane Type</b>	Thin Film Composite (TFC), Seawater grade
<b>Membrane Size</b>	1 × 4040 SWRO membrane
<b>Pressure Vessel</b>	FRP, 600 psi rating
<b>Operating Pressure</b>	55–70 bar
<b>Max. Operating Pressure</b>	70 bar
<b>Flush System</b>	Manual flush valve (standard)

### 4. Pre-Treatment

Parameter	Specification
<b>Stage 1</b>	Multimedia / quartz sand filtration
<b>Stage 2</b>	Activated carbon filtration
<b>Stage 3</b>	5 µm cartridge filter

<b>Required SDI</b>	< 3
<b>Free Chlorine</b>	< 0.1 mg/L
<b>Antiscalant Dosing</b>	Standard dosing port included

## 5. Pump System

Parameter	Specification
<b>Raw Water Pump</b>	Stainless steel centrifugal
<b>High-Pressure Pump</b>	Stainless steel multistage / seawater rated
<b>Motor Power</b>	2.2 – 3.0 kW
<b>Pressure Range</b>	55–70 bar
<b>Protection</b>	Low-pressure & dry-run protection

## 6. Instrumentation & Control

Parameter	Specification
<b>Display</b>	Digital conductivity monitor
<b>Pressure Gauges</b>	2–3 (feed / HP / concentrate)
<b>Emergency Stop</b>	Yes
<b>Automatic Shut-off</b>	Low pressure / high pressure
<b>Optional</b>	PLC control / Auto flush / Dual conductivity

## 7. Hydraulic Connections

Parameter	Specification
<b>Feed Connection</b>	¾"
<b>Permeate Outlet</b>	½"

<b>Concentrate Outlet</b>	1/2"
<b>Piping Material</b>	High-pressure FRP / SS / PVC-U (low pressure side)
<b>Flow Regulation</b>	Manual concentrate control valve

## 8. Electrical Data

Parameter	Specification
<b>Voltage</b>	380 V / 50 Hz / 3-Phase
<b>Optional</b>	400 V / 60 Hz
<b>Power Consumption</b>	3.0 – 4.0 kW
<b>Control Panel</b>	Stainless steel, IP54

## 9. Mechanical Data

Parameter	Specification
<b>Frame Material</b>	Stainless Steel 304 / 316 optional
<b>Dimensions (L × W × H)</b>	approx. 1400 × 800 × 1500 mm
<b>Weight</b>	approx. 300 – 400 kg
<b>Installation</b>	Floor-mounted, vibration-damped feet

## 10. Feed Water Requirements

Parameter	Limit
Temperature	5 – 35 °C
SDI	< 3
Iron (Fe)	< 0.05 mg/L
Manganese (Mn)	< 0.02 mg/L
Oil & Grease	< 1 mg/L



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