

SYDROS Desal - 7500



TECHNICAL DATA SHEET

7500 LPH Seawater Reverse Osmosis Plant (SWRO)

7.5 m³/h – Heavy Industrial Desalination System

1. System Overview

Parameter	Specification
System Type	Seawater Reverse Osmosis (SWRO)
Nominal Capacity	7500 L/h
Configuration	Multi-membrane array (20–24 membranes, staged parallel design)
Design	Reinforced skid-mounted stainless steel frame
Operation	Continuous industrial duty (24/7 operation)

2. Performance Data

Parameter	Value
Permeate Flow Rate	7500 L/h (±15%)
Daily Production	Up to 180 m ³ /day
Recovery Rate	35–45%
Salt Rejection	≥ 99.2%
Feed TDS (max.)	35,000 ppm
Permeate TDS	< 500 ppm (feed dependent)
Design Conditions	25°C / 35,000 ppm TDS

3. Membrane Section

Parameter	Specification
Membrane Type	Thin Film Composite (TFC), seawater grade
Membrane Size	20–24 × 4040 SWRO membranes
Pressure Vessel	FRP, 600 psi rating
Operating Pressure	55–70 bar
Max. Operating Pressure	70 bar
Flush System	Manual flush (standard) / Automatic flush optional

4. Pre-Treatment

Parameter	Specification
Stage 1	Industrial multimedia / quartz sand filtration (large vessel)
Stage 2	Activated carbon filtration (large vessel)
Stage 3	High-flow cartridge filtration (5 µm, multi-housing)

Required SDI	< 3
Free Chlorine	< 0.1 mg/L
Antiscalant Dosing	Integrated dosing skid with metering pump & tank

5. Pump System

Parameter	Specification
Raw Water Pump	Stainless steel centrifugal, high-capacity
High-Pressure Pump	Seawater-rated multistage stainless steel
Motor Power	75 – 90 kW
Pressure Range	55–70 bar
Protection	Low-pressure / dry-run / overload protection

6. Instrumentation & Control

Parameter	Specification
Display	Digital conductivity monitor
Pressure Gauges	5–6 (feed / HP / membrane / concentrate / final / interstage)
Flow Meters	Feed / permeate / concentrate
Emergency Stop	Yes
Automatic Shut-off	Low pressure / high pressure
Optional	PLC control / SCADA integration / Remote monitoring / Auto flush

7. Hydraulic Connections

Parameter	Specification
Feed Connection	4"
Permeate Outlet	3"
Concentrate Outlet	3"
Piping Material	High-pressure SS316 / FRP; PVC-U (low pressure sections)
Flow Regulation	Automated concentrate control valve optional

8. Electrical Data

Parameter	Specification
Voltage	380–415 V / 50 Hz / 3-Phase
Optional	60 Hz configuration
Power Consumption	85 – 110 kW
Control Panel	Industrial stainless enclosure, IP54 or higher

9. Mechanical Data

Parameter	Specification
Frame Material	Stainless Steel 304 (316 recommended for marine environments)
Dimensions (L × W × H)	approx. 7000 × 2500 × 2600 mm
Weight	approx. 8000 – 9500 kg
Installation	Floor-mounted, reinforced heavy-duty anchor-ready base

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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