

SYDROS Desal - 1000



TECHNICAL DATA SHEET

1000 LPH Seawater Reverse Osmosis Plant (SWRO)

1.0 m³/h – Industrial Desalination System

1. System Overview

Parameter	Specification
System Type	Seawater Reverse Osmosis (SWRO)
Nominal Capacity	1000 L/h
Configuration	Multi-membrane system (4 membranes)
Design	Skid-mounted, corrosion-resistant stainless steel frame
Operation	Continuous industrial duty

2. Performance Data

Parameter	Value
Permeate Flow Rate	1000 L/h ($\pm 15\%$)
Daily Production	Up to 24.0 m ³ /day
Recovery Rate	35–45% (seawater dependent)
Salt Rejection	$\geq 99.2\%$
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	4 × 4040 SWRO membranes
Pressure Vessel	FRP, 600 psi rating
Operating Pressure	55–70 bar
Max. Operating Pressure	70 bar
Flush System	Manual flush valve (standard) / Auto flush optional

4. Pre-Treatment

Parameter	Specification
Stage 1	Multimedia / quartz sand filter (higher capacity sizing)
Stage 2	Activated carbon filter

Stage 3	5 µm cartridge filter (high-flow housing)
Required SDI	< 3
Free Chlorine	< 0.1 mg/L
Antiscalant Dosing	Dosing pump + chemical injection port (standard)

5. Pump System

Parameter	Specification
Raw Water Pump	Stainless steel centrifugal, higher flow
High-Pressure Pump	Seawater-rated multistage stainless steel
Motor Power	5.5 – 7.5 kW
Pressure Range	55–70 bar
Protection	Low-pressure / dry-run / overload protection

6. Instrumentation & Control

Parameter	Specification
Display	Digital conductivity monitor
Pressure Gauges	3–4 (feed / HP / membrane / concentrate)
Flow Meters	Feed / permeate / concentrate
Emergency Stop	Yes
Automatic Shut-off	Low pressure / high pressure
Optional	PLC control / Auto flush / Dual conductivity / Remote monitoring

7. Hydraulic Connections

Parameter	Specification
Feed Connection	1½"
Permeate Outlet	1"
Concentrate Outlet	1"
Piping Material	High-pressure SS/FRP; PVC-U on low-pressure sections
Flow Regulation	Manual or automated concentrate control valve

8. Electrical Data

Parameter	Specification
Voltage	380–400 V / 50 Hz / 3-Phase
Optional	60 Hz configuration
Power Consumption	7.0 – 10.0 kW
Control Panel	Stainless steel enclosure, IP54

9. Mechanical Data

Parameter	Specification
Frame Material	Stainless Steel 304 (316 optional)
Dimensions (L × W × H)	approx. 2200 × 1100 × 1800 mm
Weight	approx. 750 – 1000 kg
Installation	Floor-mounted, vibration-damped feet / anchor points

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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