

SYDROS Desal - 10000



TECHNICAL DATA SHEET

10,000 LPH Seawater Reverse Osmosis Plant (SWRO)

10.0 m³/h – Industrial Desalination System

1. System Overview

Parameter	Specification
System Type	Seawater Reverse Osmosis (SWRO)
Nominal Capacity	10,000 L/h (10 m ³ /h)
Configuration	Multi-membrane array (24–32 membranes, multi-stage parallel design)
Design	Heavy-duty industrial skid / modular frame construction
Operation	Continuous industrial duty (24/7 operation)

2. Performance Data

Parameter	Value
Permeate Flow Rate	10,000 L/h ($\pm 15\%$)
Daily Production	Up to 240 m ³ /day
Recovery Rate	35–45%
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	24–32 × 4040 SWRO membranes
Pressure Vessel	FRP, 600 psi rating
Operating Pressure	55–70 bar
Max. Operating Pressure	70 bar
Flush System	Automatic flush system recommended

4. Pre-Treatment

Parameter	Specification
Stage 1	Industrial multimedia / quartz sand filtration (large pressure vessels)
Stage 2	Activated carbon filtration
Stage 3	High-flow multi-cartridge filtration (5 µm)
Required SDI	< 3
Free Chlorine	< 0.1 mg/L
Chemical Dosing	Antiscalant + optional SMBS dosing skid

5. Pump System

Parameter	Specification
Raw Water Pump	High-capacity stainless steel centrifugal
High-Pressure Pump	Seawater-rated multistage stainless steel
Motor Power	110 – 150 kW
Pressure Range	55–70 bar
Protection	Low-pressure / dry-run / overload protection

6. Instrumentation & Control

Parameter	Specification
Display	Industrial HMI touchscreen
Pressure Gauges	6–8 (feed / HP / stage / concentrate / permeate)
Flow Meters	Feed / permeate / concentrate

Conductivity Monitoring	Dual (feed & permeate)
Emergency Stop	Yes
Automation	PLC controlled, SCADA-ready
Optional	Remote monitoring / data logging / energy monitoring

7. Hydraulic Connections

Parameter	Specification
Feed Connection	4" – 6"
Permeate Outlet	4"
Concentrate Outlet	4"
Piping Material	SS316 / Duplex stainless / FRP (high pressure)
Flow Regulation	Automated concentrate control valve

8. Electrical Data

Parameter	Specification
Voltage	380–415 V / 50 Hz / 3-Phase
Optional	60 Hz configuration
Power Consumption	120 – 180 kW
Control Panel	Industrial stainless enclosure, IP54–IP65

9. Mechanical Data

Parameter	Specification
Frame Material	Stainless Steel 304 / 316 (marine grade recommended)
Dimensions (L × W × H)	approx. 8000 × 3000 × 2800 mm
Weight	approx. 12,000 – 15,000 kg
Installation	Heavy-duty foundation-mounted system

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



Sydros Water GmbH
Kirlacherstr.6
76646 Bruchsal

Engineering at
Triwo Technologie Park Bruchsal
Werner/von Siemens/
Web: www.sydros.de
Mail: industrial@sydros.de
Number: +491590 6132 674
HRB: 745634

