

SYDROS RO 4000



TECHNICAL DATA SHEET

Industrial Reverse Osmosis System – 4000 LPH (4.0 m³/h)

1. System Overview

Parameter	Specification
System Type	Brackish Water Reverse Osmosis (BWRO)
Nominal Capacity	4000 L/h (±15%)
Membrane Configuration	6 × 8040 (parallel) or 2-stage 4:2 array
Pressure Vessel Rating	600 psi FRP
Design	Heavy-duty industrial stainless steel skid
Operation Mode	Continuous 24/7 duty

2. Performance Data

Parameter	Value
Permeate Flow Rate	4000 L/h
Daily Production	Up to 96 m ³ /day
Recovery Rate	70–75%
Salt Rejection	98–99%
Feed TDS (max.)	4,000 ppm (BWRO class)
Permeate Conductivity	< 10–25 µS/cm (feed dependent)
Design Conditions	25°C / 1,000 ppm TDS

3. Membrane Section

Parameter	Specification
Membrane Type	Thin Film Composite (TFC)
Membrane Size	8040
Quantity	6 membranes
Operating Pressure	16–24 bar
Max Operating Pressure	25 bar
Auto Flush	Standard
CIP Ports	Integrated (mandatory)

4. Pre-Treatment (Mandatory Industrial Setup)

Parameter	Specification
Multimedia Filter	Required
Activated Carbon	Required
Cartridge Filtration	5 µm + 1 µm polishing
Antiscalant Dosing	Required
Softener	Recommended above 6 °dH
Required SDI	< 3 (target < 2)

5. Pump System

Parameter	Specification
Pump Type	High-pressure multistage stainless steel
Motor Power	11 – 15 kW
Operating Pressure	16–24 bar
Frequency Drive	Recommended
Protection	Low pressure / high pressure / overload / dry-run

6. Instrumentation & Control

Parameter	Specification
Control System	Industrial PLC with HMI
Conductivity Monitoring	Feed + permeate
Flowmeters	Permeate + concentrate
Pressure Monitoring	Feed / interstage / concentrate / ΔP
Alarm System	Conductivity, pressure, flow deviation
Data Logging	Standard
Remote Monitoring	Optional SCADA integration

7. Hydraulic Connections

Parameter	Specification
Feed Connection	2" – 2½"
Permeate Outlet	1½" – 2"
Concentrate Outlet	1½" – 2"
Piping Material	PVC-U PN16 or Stainless Steel
Flow Regulation	Precision concentrate valve + auto flush

8. Electrical Data

Parameter	Specification
Voltage	400 V / 50 Hz (3-phase)
Power Consumption	12 – 18 kW (system total)
Control Cabinet	Industrial stainless steel IP54
Main Protection	Industrial breaker + motor protection

9. Mechanical Data

Parameter	Specification
Frame Material	Stainless Steel 304 (optional 316)
Dimensions (L × W × H)	approx. 2800 × 1100 × 2000 mm
Weight	approx. 1200 – 1600 kg
Installation	Heavy-duty floor-mounted skid

10. Feed Water Requirements

Parameter	Recommended Limit
Temperature	5 – 35 °C
Iron (Fe)	< 0.1 mg/L
Manganese (Mn)	< 0.05 mg/L
Hardness	< 6 °dH without softener
Turbidity	< 1 NTU
SDI	< 3 (target < 2)



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