

SYDROS RO 1000



TECHNICAL DATA SHEET

Industrial Reverse Osmosis System – 1000 LPH (1.0 m³/h)

1. System Overview

Parameter	Specification
System Type	Brackish Water Reverse Osmosis (BWRO)
Nominal Capacity	1000 L/h (±15%)
Recommended Membrane Configuration	2 × 8040 in parallel (low-flux, high stability)
Alternative Configuration	4 × 4040 in parallel (compact/low-cost option)
Design	Skid-mounted stainless steel frame
Operation Mode	Continuous industrial duty

2. Performance Data

Parameter	Value
Permeate Flow Rate	1000 L/h (±15%)
Daily Production	Up to 24 m ³ /day
Recovery Rate	60–75% (feed dependent)
Salt Rejection	98–99%
Feed TDS (max.)	2,500 ppm (<i>typical BWRO range; higher possible with derating</i>)
Permeate Conductivity	< 10–30 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 / Layout	2 × 8040 (parallel)
Pressure Vessels	FRP, 450 psi rating
Operating Pressure	12–18 bar
Max Operating Pressure	20 bar
Flush System	Manual flush (standard) / Auto flush (optional)
CIP Connections	Optional (recommended at 1000 LPH)

4. Pre-Treatment (Recommended for 1000 LPH)

Parameter	Specification
Filter Housings	3–4 × 20" Big Blue or industrial cartridge rack
Stage 1	20 µm sediment (or multimedia upstream if needed)
Stage 2	5 µm sediment
Stage 3	Activated carbon block (dechlorination)
Stage 4	1 µm polishing filter
Required SDI	< 3 (target < 2 for best stability)
Free Chlorine	< 0.1 mg/L

5. Pump System

Parameter	Specification
Pump Type	Vertical multistage stainless steel
Motor Power	2.2 – 3.0 kW
Protection Class	IP55
Pressure Range	12–18 bar
Protection	Low pressure, dry-run, overload, high-pressure cut-off

6. Instrumentation & Control

Parameter	Specification
Controller	Industrial control panel (IP54)
Conductivity Monitoring	Permeate conductivity (standard)
Optional Conductivity	Feed + permeate (recommended)
Pressure Gauges	3–4 (feed / membrane inlet / concentrate / optional ΔP)
Flowmeters	Permeate + concentrate (recommended at 1000 LPH)
Safety	Emergency stop, automatic shutdown (HP/LP)
Optional	PLC + alarms + data logging, remote IO

7. Hydraulic Connections

Parameter	Specification
Feed Connection	1" – 1½" (site-dependent)
Permeate Outlet	1"
Concentrate Outlet	1"
Piping Material	Industrial PVC-U / SS braided hoses at vibration points
Regulation	Precision concentrate control valve + flush valve

8. Electrical Data

Parameter	Specification
Voltage	400 V / 50 Hz (3-phase)
Power Consumption	2.5 – 4.0 kW (<i>depends on feed salinity/pressure</i>)
Protection	Main breaker + motor protection + E-stop loop
Panel Material	Stainless steel enclosure

9. Mechanical Data

Parameter	Specification
Frame Material	Stainless Steel 304
Dimensions (L × W × H)	approx. 1600 × 750 × 1600 mm
Weight	approx. 250 – 350 kg
Installation	Floor-mounted, adjustable feet

10. Feed Water Requirements (Key Limits)

Parameter	Recommended Limit
Temperature	5 – 35 °C
Iron (Fe)	< 0.1 mg/L
Manganese (Mn)	< 0.05 mg/L
Hardness	< 8 °dH recommended (or antiscalant/softener)
Turbidity	< 1 NTU
SDI	< 3 (target < 2)



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