

**SYDROS RO 6000**



**TECHNICAL DATA SHEET**

**Industrial Reverse Osmosis System – 6000 LPH (6.0 m<sup>3</sup>/h)**

**1. System Overview**

Parameter	Specification
System Type	Brackish Water Reverse Osmosis (BWRO)
Nominal Capacity	6000 L/h (±15%)
Membrane Configuration	2-stage 6:3 array (9 × 8040 membranes)
Pressure Vessel Rating	600 psi FRP
Design	Reinforced stainless steel industrial skid
Operation Mode	Continuous 24/7 duty

**2. Performance Data**

Parameter	Value
Permeate Flow Rate	6000 L/h
Daily Production	Up to 144 m <sup>3</sup> /day

<b>Recovery Rate</b>	70–75%
<b>Salt Rejection</b>	98–99%
<b>Feed TDS (max.)</b>	5,000 ppm (BWRO range)
<b>Permeate Conductivity</b>	< 10–25 µS/cm
<b>Design Conditions</b>	25°C / 1,000 ppm TDS

### 3. Membrane Section

Parameter	Specification
<b>Membrane Type</b>	Thin Film Composite (TFC)
<b>Membrane Size</b>	8040
<b>Quantity</b>	9 membranes
<b>Operating Pressure</b>	20–28 bar
<b>Max Operating Pressure</b>	30 bar
<b>Auto Flush</b>	Standard
<b>CIP System</b>	Fully integrated, mandatory
<b>Interstage Monitoring</b>	Standard

### 4. Pre-Treatment (Full Process Setup Required)

Parameter	Specification
<b>Multimedia Filter</b>	Required
<b>Activated Carbon</b>	Required
<b>Cartridge Filtration</b>	5 µm + 1 µm polishing
<b>Antiscalant Dosing</b>	Required

<b>Softener</b>	Recommended above 4–5 °dH
<b>Required SDI</b>	< 3 (target < 2)
<b>Turbidity</b>	< 1 NTU

## 5. Pump System

Parameter	Specification
<b>Pump Type</b>	High-pressure industrial multistage stainless steel
<b>Motor Power</b>	<b>22 – 30 kW</b>
<b>Operating Pressure</b>	20–28 bar
<b>Frequency Drive</b>	Standard recommended
<b>Protection</b>	Low pressure / high pressure / overload / dry-run

## 6. Instrumentation & Control

Parameter	Specification
<b>Control System</b>	Industrial PLC + HMI
<b>Conductivity Monitoring</b>	Feed + permeate
<b>Flowmeters</b>	Permeate + concentrate
<b>Pressure Monitoring</b>	Feed / stage 1 / stage 2 / concentrate / $\Delta P$
<b>Alarm System</b>	Conductivity, pressure, flow deviation
<b>Data Logging</b>	Standard
<b>Remote Monitoring</b>	SCADA-ready

## 7. Hydraulic Connections

Parameter	Specification
<b>Feed Connection</b>	3"
<b>Permeate Outlet</b>	2"
<b>Concentrate Outlet</b>	2"
<b>Piping Material</b>	Stainless Steel recommended
<b>Flow Regulation</b>	Automated concentrate valve + auto flush

## 8. Electrical Data

Parameter	Specification
<b>Voltage</b>	400 V / 50 Hz (3-phase)
<b>Power Consumption</b>	<b>25 – 40 kW (system total)</b>
<b>Control Cabinet</b>	Industrial stainless steel IP54
<b>Main Protection</b>	Industrial breaker + motor protection

## 9. Mechanical Data

Parameter	Specification
<b>Frame Material</b>	Stainless Steel 304 (optional 316L)
<b>Dimensions (L × W × H)</b>	approx. <b>3800 × 1300 × 2200 mm</b>
<b>Weight</b>	approx. <b>2500 – 3500 kg</b>
<b>Installation</b>	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	< 4–5 °dH without softener
SDI	< 3 (target < 2)



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