

**SYDRoS RO 10,000**



**TECHNICAL DATA SHEET**

**Industrial Reverse Osmosis System – 10,000 LPH (10 m<sup>3</sup>/h)**

**1. System Overview**

Parameter	Specification
<b>System Type</b>	Brackish Water Reverse Osmosis (BWRO)
<b>Nominal Capacity</b>	10,000 L/h (±15%)
<b>Membrane Configuration</b>	<b>2-stage 8:5 array (13 × 8040 membranes)</b>
<b>Pressure Vessel Rating</b>	600 psi FRP
<b>Design</b>	Heavy-duty reinforced stainless steel process skid
<b>Operation Mode</b>	Continuous 24/7 industrial duty

**2. Performance Data**

Parameter	Value
<b>Permeate Flow Rate</b>	10,000 L/h

<b>Daily Production</b>	Up to 240 m <sup>3</sup> /day
<b>Recovery Rate</b>	70–75%
<b>Salt Rejection</b>	98–99%
<b>Feed TDS (max.)</b>	5,500 ppm (BWRO class)
<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>	13 membranes
<b>Operating Pressure</b>	22–32 bar
<b>Max Operating Pressure</b>	35 bar
<b>Auto Flush</b>	Standard
<b>CIP System</b>	Dedicated external CIP skid
<b>Interstage Monitoring</b>	Standard

### 4. Pre-Treatment (Mandatory Process Train)

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 °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>45 – 75 kW</b>
<b>Operating Pressure</b>	22–32 bar
<b>Frequency Drive</b>	Standard
<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
Feed Connection	4"
Permeate Outlet	3"
Concentrate Outlet	3"
Piping Material	Stainless Steel recommended
Flow Regulation	Automated concentrate control

## 8. Electrical Data

Parameter	Specification
Voltage	400 V / 50 Hz (3-phase)
Power Consumption	60 – 90 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 316L)
Dimensions (L × W × H)	approx. 5500 × 1800 × 2400 mm
Weight	approx. 5000 – 7000 kg
Installation	Heavy-duty process 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 °dH without softener
SDI	< 3 (target < 2)



Sydros Water GmbH  
Kirrlacherstr.6  
76646 Bruchsal

Engineering at  
Triwo Technologie Park Bruchsal  
Werner/von Siemens/

**Web:** [www.sydros.de](http://www.sydros.de)

**Mail:** [industrial@sydros.de](mailto:industrial@sydros.de)

**Number:** +491590 6132 674

**HRB:** 745634



