TP SERIES

CENTRAL REVERSE OSMOSIS SYSTEM

Utilizing a dual-stage configuration, the RIVAMED TP Series ensures high product water quality using municipal water as the feed source. RIVAMED TP Series is designed in compliance with various international standards and regulations applicable to hemodialysis.

Engineered in full compliance with international hemodialysis standards and regulatory requirements, the TP Series prioritizes operational safety through its two fully independent RO stages. In the event that one stage becomes inactive, the operator can easily activate the second stage independently via the control panel, thereby ensuring continuous operation. In addition, parallel operation allows the product water capacity to be increased when required.

For the thermal disinfection of distribution loops and hemodialysis machines, TP Series can be easily integrated with RIVAMED Heat Disinfection and Ultrafiltration Systems. Its user-friendly interface simplifies configuration and monitoring processes while also enabling easy connectivity and software updates.

Up to 85% Water Recovery & Energy Saving

Ultra-Pure Water with HDF Capability

Smart PLC / Microprocessor Control System

Comprehensive Safety & Protection

Compliance with ISO Standards

ISO 23500-1 : Addresses guidance for the preparation and quality management of fluids for hemodialysis and related therapies

ISO 23500-2 : Covers water treatment equipment for hemodialysis applications and related therapies

ISO 23500-3 : Specifies minimum requirements for water for hemodialysis and related therapies

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CENTRAL REVERSE OSMOSIS SYSTEM

TP SERIES

- Enhanced chemical and microbiological purity through twin-pass operation
- Implementation of water and energy saving technology through product water recirculation, concentrate recovery, and capacity control in accordance with the demand of hemodialysis machines
- Compact and streamlined design providing efficient use of installation space
- Semi-automatic chemical disinfection and optional fully automatic heat disinfection programs
- Use of high rejection rate polyamide membranes
- Integrated permeate pressure holding valve for precise system pressure control
- Continuous monitoring of conductivity, pressure, temperature, product water flow, and concentrate flow for each module
- Programmable multiple independent on/off functions
- Adjustable interval flushing timer programs
- Built-in self-test function activated upon power-up
- Automatic activation of emergency mode in the event of electronic failures
- Monitoring and control via a PLC/microprocessor-controlled control panel with a multi-color touchscreen interface

OPTIONAL CONFIGURATIONS

- Leak Detector
- Ultrafiltration (Bacteria and Endotoxin Filter)
- Remote Monitoring and Control
- Heat Disinfection

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TECHNICAL DATA

PARAMETER	TP-S	TP-XL
1. PERFORMANCE DATA		
Dimensions (W x D x H)	150 x 80 x 160 cm	226 x 115 x 170 cm
Weight	Max 350 kg	Max 600 kg
Permeate Capacity	350 - 1650 lt/h	1000 - 5000 lt/h
Point of Use (dialysis machine)	Up to 34	Up to 104
Dialysis Water Pressure	2 - 6 bar	
Concentrate Pressure	< 20 bar	
Salt Removal Rate	> 99% NaCl	
System Recovery	Up to 85%	
Bacteria and Endotoxin Removal	> 99%	
Noise Level	< 70 dB (A)	
Heat Disinfection	Optional	
2. WATER CONNECTIONS		
Soft Water Supply	DN 25 hose nozzle	
Production Water	20 mm PEX-A connection	25 mm PEX-A connection
Wastewater	DN 15 hose nozzle	DN 25 hose nozzle
3. ELECTRICAL SAFETY		
Energy Consumption	Max 5.5 kW	Max 11 kW / 22 kW*
Power Plug	CEE 16-32 A	
Supply Voltage	380-400 V AC / 220-230 V AC	380-400 V AC
Water Protection Degree	IP44	
Working Mode	Continuous operation	
Leakage Currents	Comply With ANSI/AAMI IEC 60601-1 standard	
Protection Type	I	
Application Part Classification	Type B	

*In case of heat disinfection

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CE 2292 In accordance with Regulation (EU) 2017/745 of the European Parliament and of the Council dated 5 April 2017 on medical devices.
MDR Classification: Class IIb – accessory to a medical device.

TECHNICAL DATA

PARAMETER	TP-S	TP-XL
4. FEED WATER		
Quality	Softened Tap Water	
Hardness	1.78 ppm $CaCO_3$ (0.018 mmol/l)	
SDI	< 3	
Conductivity	< 2000 µS/cm	
TDS	< 1200 mg/l	
Iron	< 0.1 mg/l	
Free Chlorine	< 0.1 mg/l	
Temperature Range	5-35 °C	
pH Value	6.5-8.5	
5. ENVIRONMENTAL CONDITIONS		
Shipping / Storage Temperature	+1 to +45 °C	
Operating Temperature	+1 to +35 °C	
Humidity	Max. 90% relative humidity, non-condensing environment	
Installation Altitude	< 2000 m above sea level	
6. FIELD REQUIREMENTS		
Water Supply	2 – 6 bar dynamic pressure*	
Wastewater	50 mm, gravity drainage for 3 m³/h**	70 mm, gravity drainage for 7 m³/h**

7. PRE-TREATMENT

Suggested Units

90 µm washable filter, multimedia filter, tandem water softener, activated carbon filter, microfiltration

**Pressure reducing valve or a pressure boosting pump may be required.*

***Maximum 50 cm above floor level.*

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