Delivering the Best Experience... Packaged for You

Performance
TITAN MBR™ provides high oxygen transfer and a stable process tailored to your requirements, and is capable of achieving superior effluent quality and Title 22 approved water reuse.

Easiest MBR O&M
Experience the best O&M of any MBR through quick component access, smart instrumentation, remote data monitoring, reduced process complexity, & streamlined CIP membrane cleaning.

Robust Design
Rugged tank and flat-sheet membrane construction with expanded stainless-steel componentry and streamlined electrical design. Intuitive graphical touchscreen QUICKSMART™ PLC provides easy control.

Value
Increased energy efficiency (up to 30%) with updated process & automation & no permeate pumps. Backed by complete single-source technical support, from pre-design to installation and beyond.

TITAN MBR™ arrives in compact factory-built system models now with significantly less field assembly for swifter installation and start-up. Every system is backed by complete single-source technical support, from pre-design to installation and beyond, from Smith & Loveless, a company with more than 70 years experience and a strong reputation for reliability.

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Data Log

Sample Screenshots

(Entire screen not displayed here)

Easiest Operation & Maintenance of all MBRs

- Infrequent & simplest membrane cleaning of any MBR
- Easily accessible PLC, electrical & process components
- No internal mechanical pumps eliminate O&M tasks & costs

Robust System Design

- Quality-controlled manufacturing with stainless steel components
- Flat-sheet membrane construction for less breakage & longer life
- Pre-wired, compact models ideal for shipping & site requirements

Creating Value for You

- Superior total cost of ownership with simplified O&M
- Best Available Technology: achieves water reuse quality effluent
- Single-source support comes from company with 70+ years

Performance with Smart Automation

- Achieve efficient treatment for high quality effluent and reuse
- Automation features include decanting and chemical cleaning
- Color touchscreen PLC controls offer intuitive monitoring & control

ran from the Innovator in operator-friendly packaged treatment systems, S&L delivers to you the best available MBR technology for Operation and Maintenance and Total Cost of Ownership.

Main Features

- 9.7” (24.6 cm) 65K-Color TFT LCD Touch Screen HMI
- PLC/Microprocessor-Based Controller
- NEMA 4 Rated when installed in Enclosure
- UL Certified
- Protected by Surge Protective Device (SPD)
- English/Spanish Toggle
- More than 15 Different Screen Selections
- Data, Maintenance, and Alarm Logging
- Complete “Help” Menu and Support Screens

RemoteView™ Cloud Services through QUICKSMART™

Gain remote access monitoring and troubleshooting services with RemoteView™ from S&L. We are here to help you make owning and operating an MBR the easiest of any system.
Each American factory-built TITAN MBR™ System includes robust, epoxy and polyurethane coated S&L V-Crimp tankage, configured process and MBR zones with S&L flat-plate Membranes, automatic fine screening (if selected), stainless steel internal components, pre-wired instrumentation, and QUICKSMART™ Touchscreen PLC Controls. The result provides best-available MBR technology with superior O&M ease.

**Achievable with optional process selections depending upon the influent**

- **BOD:** < 3 mg/l
- **TSS:** < 1 mg/l
- **Turbidity:** < 0.2 NTU
- **TN:** < 3 mg/l*
- **NH₃:** < 1 mg/l
- **TP:** < 0.05 mg/l*

**Achieve Superior Effluent Quality**

**Type:** Submerged, PVDF+PET Flat-Plate

**Design Flux:** 13 gpd/sf [22.1 lmh]

**Pore Sizing:** 0.08 microns [MF]

**TMP Range:** Trans Membrane Pressure 0.50 - 2.00 psi [35 - 138 mB]

**Cleaning:** In-Place; Semi-annual cycle**; 4 hrs.

**Flow:** 5,000 gpd - 0.1 MGD / 19 cmd - 378 cmd

**Standard Systems**

**Featured Options**

- Enhanced Remote Monitoring
- Process Instrumentation
- Zones for Enhanced Nutrient Removal
- Tank Covers / Weatherization Packages
- Skid-mounted Chemical Cleaning Tank
- Covers for Instrumentation
- Aluminum or 316 Stainless Steel Cable Trays
**System Diagram & Features**

**System Process & Construction Features**

1. **Flexible Process Zones, Configured**
   - TITAN MBR™ comes configured to meet your effluent goals. Optional Flow Equalization, Anoxic & Sludge Storage Zones complement the MBR Zone. California Title 22 compliant, achieving water reuse.

2. **Automatic Anoxic Recycle System**
   - Adjustable recycle stainless steel LIQUIDLIFT™ accommodates lower flow conditions to maintain high levels of nitrification. Automatically controlled by the PLC with HMI operator input.

3. **Robust, Efficient Aeration**
   - Stainless steel, medium-bubble aerators operating costs while eliminating the fouling and maintenance costs associated with fine bubble type diffusers.

4. **Smart Wire Management System**
   - Factory-installed and strategically located instrumentation and cable wireways minimize field wiring for easier installation. Optional instrumentation covers (shown above) are available.

5. **Simple, Automatic Fine Screening**
   - Any TITAN MBR™ model with Flow Equalization comes standard with integral OBEX™ fine screening.

6. **Safe & Easy O&M Access (Factory-Supplied)**
   - S&L stairway access to walkway for easy O&M. All maintenance tasks can be safely and comfortably accomplished from here—protected by OSHA standard 42” high (106 cm) safety railing.

7. **Easy, Infrequent Membrane Cleaning**
   - Membrane clean-in-place (CIP) system, typically conducted semi-annually for less than 4 hours, features easy access to tankage for feed and spent chemicals.

8. **Influent Transfer Eliminates Pump O&M**
   - S&L MINI-JECT™ influent transfer with no moving parts eliminates need for mechanical pumps and associated maintenance & replacement costs. Provides constant flow regardless of flow level.

9. **QUICKSMART™ PLC Touchscreen Ease**
   - QUICKSMART™ Controls provide unparalleled ability to monitor and adjust all of your treatment system functions with a highly intuitive, easy-to-navigate touchscreen PLC interface.

10. **RemoteView™ Cloud Remote Monitoring**
    - Cloud-based RemoteView™ monitoring services are available from Smith & Loveless Inc. We are here to help you!

**Operation & Maintenance Features**

11. **Robust Submerged S&L Flat-Plate Membranes (MBR Zone)**
    - TITAN MBR Flat-Plate Membranes (MF) maintain high permeability and flux rates even at peak-day rates. They stack within a fully submerged module inside the aeration zone. Transmembrane pressure created by gravity drives the flow through the membranes. Clean water discharges while blocked solids remain in the aeration zone. Diffusers beneath the module scour the membranes while also providing air supply to the bacteria. Chemical cleaning occurs efficiently in-place—typically on a semi-annual basis—with simple chemical injection. No permeate pumps are required, saving energy and maintenance compared to most other MBR systems.

**Compare Submerged S&L Flat-Plate Membranes vs. Hollow-Fiber & Other Types**

- Lower fouling rate because of better air scour with the flat sheet
- Cleaned in place, no need to remove membranes
- Less chemicals needed to clean
- Less time to clean
- No breakage issues, more durable
- No issues with stringy solids like hair
- No backwash or back pulse required
- No air integrity testing or pinning of fibers

**Other Standard Features & Options**

- Stainless Steel Piping Throughout
- S&L V-Crimp Epoxy-Coated Tankage
- Optional Noise Attenuation (Blowers)
- Optional Tank Covers
- Optional Remote Monitoring Services

**Designed with robust stainless steel piping, smart automation and O&M cost-saving features, TITAN MBR™ delivers the best in MBR experience.**
Achieve Superior Effluent Quality

- **BOD:** < 3 mg/l
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- **Turbidity:** < 0.2 NTU
- **TN:** < 3 mg/l*
- **NH3:** < 1 mg/l
- **TP:** < 0.05 mg/l*

*achievable with optional process selections

S&L Flat-Plate Membrane Data [Typical]

- **Type:** Submerged, PVDF+PET Flat-Plate
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Smith & Loveless Inc.
www.SmithandLoveless.com
14040 Santa Fe Trail Dr., Lenexa, KS USA 66215-1284
Phone: (913) 898-5201  Fax: (913) 888-2173