

Introducing The **SilentAlarm™ SMART™** Technology

The World's only Real-Time, Actionable Membrane Monitoring & Optimization & Early Fouling Detection & Measurement Technology

Key Functionalities & Benefits

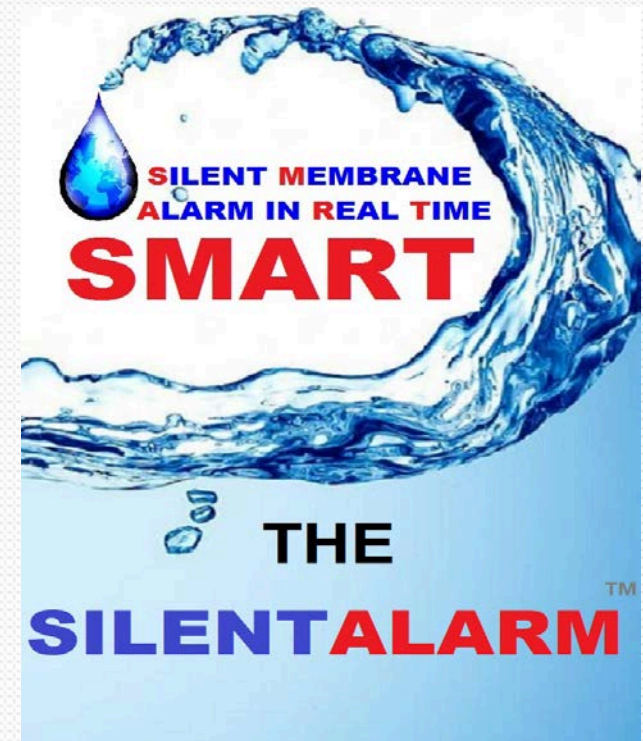
Detects, measures and monitors membrane early fouling/scaling development, system's performance & true costs in **Real Time**.

Calculates and displays a unique performance indicator called the **Fouling Monitor (FM)** for RO/NF, and **Permeability Monitor (PM)** for UF/MF systems, and warns when they exceed set limits so that the operator can take immediate troubleshooting and corrective measures before too late.

Optimizes membrane plant **recovery ratio**, **energy consumption**, chemical consumption, **operational efficiency**, **O&M costs** and membrane replacement, additions & maintenance requirements.

Allows plant owners to verify their membranes' **true key performance indicators**, **fouling potential**, **maintenance and operating cost efficiency** under real plant and site conditions.

Provides key tool to implement **efficient and seamless digital transformation** of water treatment plants and utilities via SCADA and control systems.



The SilentAlarm™ Software Suites

Real-Time, Early-Warning Membrane Fouling & Performance Analytical Monitoring System

Key Features

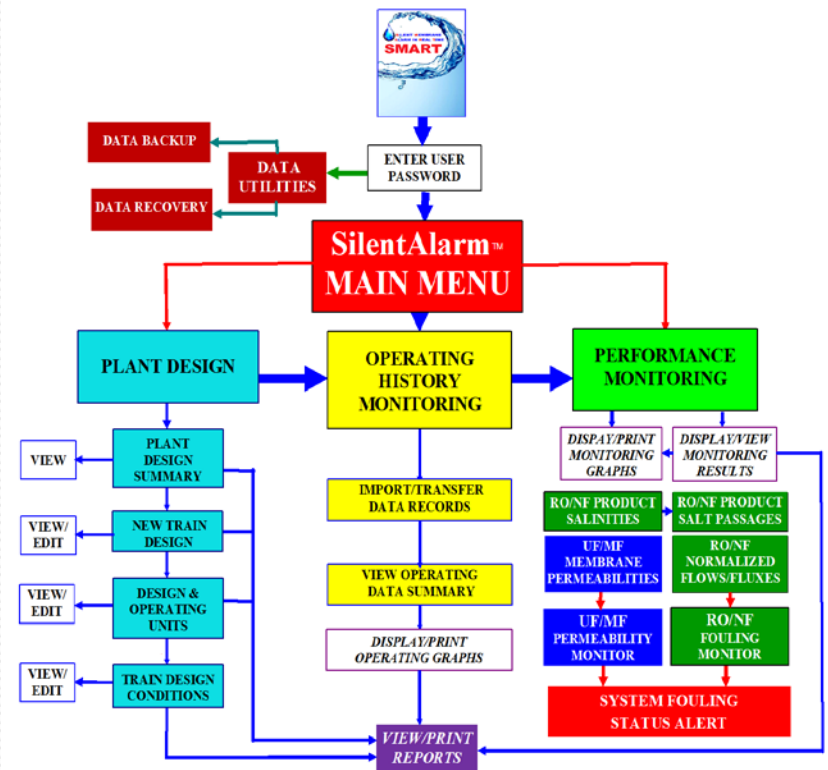
Universally applicable to any pressure-driven membrane water desalination and filtration process, raw water source or membrane manufacture, staging or design configuration.

Uniquely capable of simultaneous and dynamic monitoring and comparisons of the operational efficiency and true performance of different membrane manufacturers, process configurations, pretreatment regimes or cleaning cycles.

Requires ONLY train/skid base design and operating data from RO, NF, UF or MF plants per ASTM-D4516 standard normalization method.

NO need for installation or usage of costly monitoring or elaborate imaging equipment, sensors, test kits, pilot skids or complex analyses or modeling.

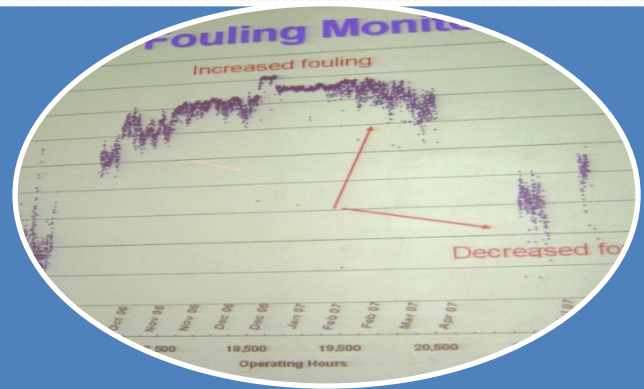
Operating data can be transmitted from SCADA or other data systems for instant control system analysis and laram-setting via digital transformation of water treatment plants and utilities.



How the Silent Membrane Alarm in Real Time (SMART™) system works



SilentAlarm™ Testimonials



- Installed, evaluated and validated at over 35 RO, NF, UF & MF plants worldwide, including plants owned and operated by the world's largest producer of desalinated water and the world's largest producer of oil.
- Officially tested, validated, approved and recommended by the industry's global membrane technology application pioneer and manufacturer, "Permasep" Products, E.I. DuPont de Nemours, USA, the original author of ASTM D 4516 normalization method.
- Contact us for more testimonials and plant case histories.



Custom Software Versions

- **SilentAlarm_limited**: Single-train RO/NF or UF/MF Plants.
- **SilentAlarm_ultima**: Multi-train, single-stage UF/MF Plants.
- **SilentAlarm_optima**: Single-pass, multi-stage, multi-train, RO/NF Plants.
- **SilentAlarm_maxima**: Double-pass, multi-train, multi-stage RO/NF and UF/MF and/or SWRO/BRO Plants.
- Custom Configurations, output, staging, screens, graphs, reports etc.)

Industries Served

- Water Desalination & Filtration
- Water Treatment Chemicals
- Membrane Research
- Pharmaceutical
- Semi-Conductor
- Mining
- Food & Beverage
- Oil & Gas

Who We Are

Water desalination and membrane technology application experts, consultants, technology developers & licensors with 39 years of technical expertise and hands-on experience & involvement in over 50 RO and other membrane plants & projects worldwide, especially in Saudi Arabia, United Arab Emirates, Bahrain, Kuwait, Oman, Malta & USA.

Contact us today for your free membrane plant evaluation trial and license quote