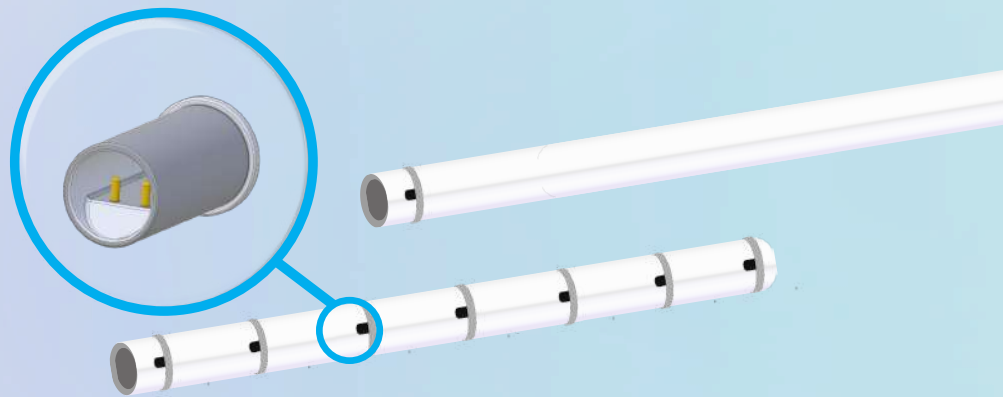




INSTRUMENTATION
TECHNOLOGIES

Elevate Your Plant's Potential with **SWICSSY**

Ensure real-time monitoring of your RO membranes' performance.



Submerged wireless conductivity sensor system

SWICSSY



With SWICSSY, you **transform** your **RO membrane** maintenance approach, ensuring **optimal performance**, **minimizing downtime**, and **maximizing cost savings**.

Say hello to a more efficient, proactive solution for your desalination plant.





CURRENT CHALLENGES

- **Reactive Maintenance:**
Traditional methods lead to reactive maintenance, resulting in costly downtime.
- **Laborious Maintenance:**
Tiresome manual mapping and probing processes.
- **Safety Risks:**
Manual procedures pose safety hazards to personnel and equipment.
- **High costs:**
Shutdowns for maintenance incur significant expenses and disrupt operations.

SWICSSY SOLUTIONS

- **Predictive Maintenance:**
Identify and address membrane issues before they impact operations.
- **PV Performance Visibility:**
Gain real-time data on PV or specific RO membrane performance.
- **Streamlined Operations:**
Automate tasks to eliminate the need for manual intervention, enhancing safety and efficiency.
- **Seamless Integration:**
Integrate measurements seamlessly into operational strategies without halting plant operations.

Optimizing PV PROFILING with SWICSSY

<p>LESS</p> 	<p>MONITORING</p> <p>Current profiling methods require a dedicated staff member to collect samples from each Pressure Vessel (PV), consuming valuable manpower and time.</p> <p>SWICSSY <i>revolutionizes profiling</i> by offering automated, continuous monitoring of PVs, eliminating the need for dedicated personnel and reducing labor costs.</p>		<p>INSTANT ALERTS</p> 
<p>AUTOMATED</p>		<p>REAL-TIME MEASUREMENTS</p> <p>Testing is typically performed on a weekly basis, resulting in delays in identifying issues. Gain immediate insights into conductivity levels with SWICSSY's real-time measurement capabilities, enabling prompt response to deviations.</p> <p>SWICSSY provides <i>instant alerts</i> and notifications, facilitating predictive maintenance and minimizing downtime.</p>	
	<p>SHORT REACTION TIME</p>		

EFFICIENT PROBING with SWICSSY

SWICSSY leads to **cost savings** through optimized maintenance schedules, reduced risks for personnel, and increased productivity.

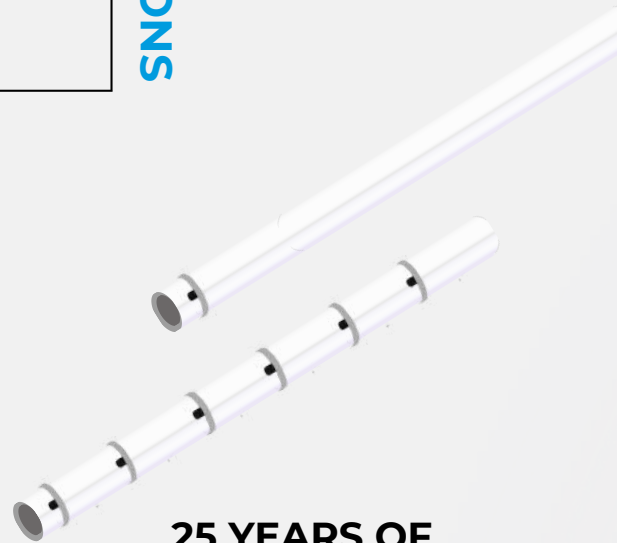
	<p>COMPREHENSIVE COVERAGE</p> <p>There's a risk that not all RO Membranes are adequately probed during periodic checks.</p> <p>With SWICSSY you ensure every RO Membrane is consistently monitored in real-time, providing continuous insights into performance trends.</p>	<p>PRO ACT IVE</p>	
<p>AUTOMATED PRECISION</p> <p>Current practices involve periodic probing, which can be time-consuming and disrupt plant operations.</p> <p>SWICSSY offers a revolutionary solution by systematically and automatically measuring conductivity in each RO Membrane continuously and accurately.</p>	<p>PREC ISION</p> 	<p>CUSTOMIZABLE MONITORING</p> <p>Tailor SWICSSY's monitoring intervals to suit your plant's needs, from as frequently as every 10 minutes to longer intervals, providing flexibility without sacrificing accuracy.</p>	
		<p>ENHANCED SAFETY</p> <p>Traditional methods require manual insertion of probes to measure conductivity, posing safety risks and potential inaccuracies.</p> <p>SWICSSY's non-intrusive monitoring system eliminates the danger associated with manual probing.</p>	

TECHNICAL SPECIFICATIONS

SIP		Sensor inner part	
<ul style="list-style-type: none"> • Conductivity measurement range • Conductivity indicator range • Measurement accuracy in measurement range • Measurement accuracy in indicator range • Temperature measurement range • Temperature measurement accuracy • Power supply • Communication • Power consumption 	<ul style="list-style-type: none"> • 100uS/cm - 1400uS/cm • outside of measurement range • < 5% • > 5% • 0°C - 60°C • +/- 0,5°C • Wireless (no need for battery) • Wireless, Half-duplex • 10mA @3V3 		
SOP		Sensor outer part	
<ul style="list-style-type: none"> • Power supply • Power consumption • I/O access • Enclosure IP level • Output values 	<ul style="list-style-type: none"> • 12.- 24 VDC • 50mA - 80mA • CAN bus • IP67 • raw measured values • uS/cm @ 25°C • Temperature [°C] 		
Stack node		SWICSSY controlling device	
<ul style="list-style-type: none"> • Power supply • CAN bus interface on SOP side • Power consumption • Network connectivity • Local data-storage • User access 	<ul style="list-style-type: none"> • 230VAC, 50Hz • Whole rack of Pressure vessels • 0.2 A • Wired and wireless • Hard drive • API 		

Key features

- Ethernet connectivity
- API access - optionally system could be integrated in Scada systems
- Support for Grafana - online data visualization tool that works on Windows, Linux, IOS
- Easily scalable system to support multiple rack setups
- Configurable setup of pressure vessels



About Instrumentation Technologies

European high-tech company with more than 25 years of experience developing instruments for **high-speed signal acquisition and data processing** in the fields of **High-energy science, Transportation, Telecommunications, Aerospace, Energy, Water treatment** and **Defense**.

In 2022, Instrumentation Technologies developed **SWICSSY** in response to a challenge presented by Acciona within the Digifed program. The challenge was to establish an end-to-end digital solution for measuring, reporting, and visualizing the performance of each reverse osmosis membrane within pressure vessels as part of their desalination plants.

SWICSSY is a testament to the successful transfer of knowledge and capabilities into the water treatment industry.

25 YEARS OF EXPERIENCE

- HIGH-SPEED
- SENSORICS
- DATA AQUISION
- WIRELESS COMMS

HOW WE WORK

- IDEATION
- DESIGN
- DEVELOPMENT
- CERTIFICATION