The Culligan® Smart Controller for Portable Exchange Deionization Systems and the Culligan® Smart Monitor

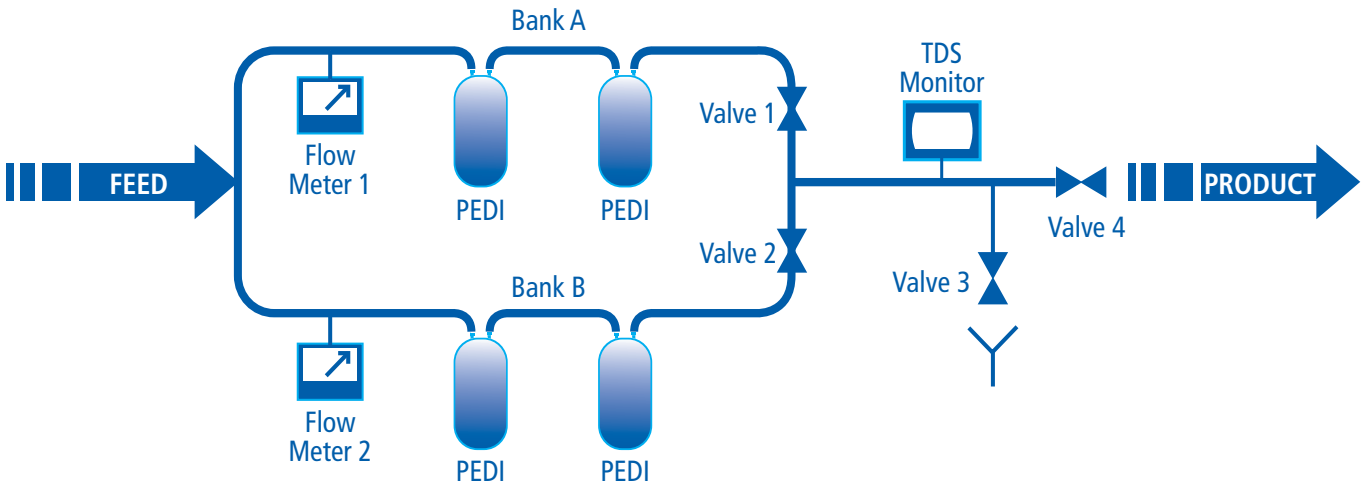
Reduce risks in water related processes while reducing operating costs

The Culligan® Smart Controller for PEDI systems and the Culligan® Smart Monitor provides advanced control and monitoring for a wide variety of water treatment equipment. It can be used to monitor and control softeners, filters, ultra-filters, reverse osmosis and PEDI systems made by Culligan® and most other manufacturers. With the Culligan® Smart Controller / Monitor, which is comprised of multiple sensors and communications capabilities, customers can monitor their water treatment equipment performance and maintenance needs at a single site or across multiple ones 24/7. This helps companies to operate at improved efficiency, reduce potential production delays and decrease overall operating costs.

Culligan® Smart Controller for PEDI systems

Application: PEDI Bank Switcher

In this mode the Culligan® Smart Controller can be used to switch between two banks of DI tanks.



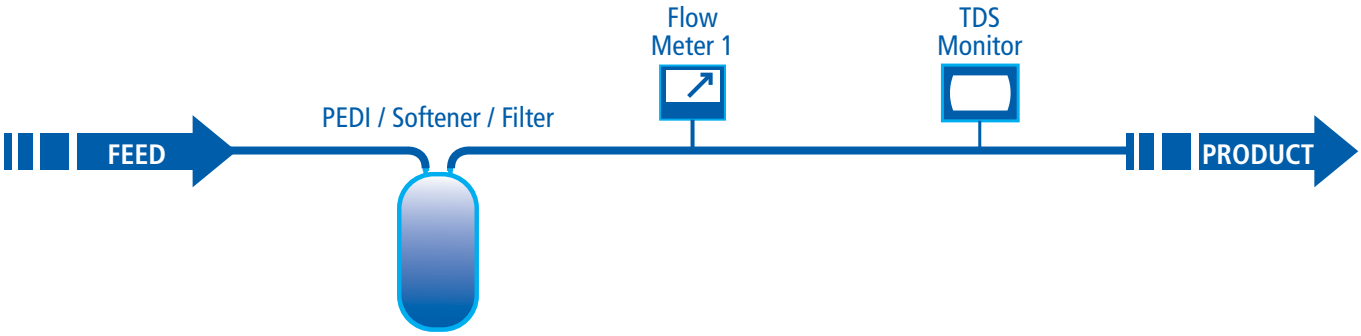
How it works:

At first deionized water from bank "A" is sent to drain until a specific quality is met. This is called a quality rinse. Once the water quality requirement is met then high quality deionized water flows to service. The system continues to monitor water quality and provides deionized water from bank "A" until bank "A" is no longer able to produce the specified water quality. At this point it switches to bank "B" and repeats the same process with bank "B". The system monitors the total gallons of water and the average daily gallons through each bank. It also allows both banks to be set with a capacity and the system counts down from that capacity until it reaches 0. At this point, the system calls in, to indicate that the total capacity has been exhausted. However, as long as water of sufficient quality is produced by the system, deionized water continues to be supplied to service.

Culligan® Smart Monitor

Application: Culligan® Smart Monitor for PEDI, Softener or Filter

In this mode, the Culligan® Smart Monitor can supervise either one PEDI tank or up to two softener or filter tanks.



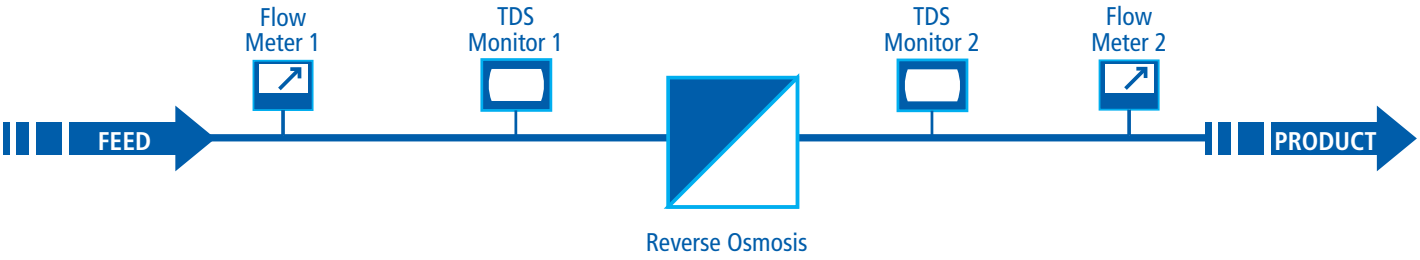
How it works:

The tanks can each be programmed with an initial capacity. With the flow meter(s) the system monitors the remaining capacity in each tank, keeping track of average daily gallons used, and remaining capacity. When the remaining capacity reaches zero, an alarm condition is generated. One TDS probe can be used to determine if the product TDS is exceeding its programmed limit. Differential pressure switches can also be used to trigger an alarm. Furthermore, up to two pressure transducers can be programmed with upper and lower limits. If the upper or lower limits are exceeded, the monitor will trigger an alarm. External dry contact inputs can also be used, such as from a hardness analyzer or other water quality monitoring device, to trigger an error condition. The system can also monitor an Aqua Sensor probe.

Culligan® Smart Monitor (continued)

Application: Culligan® Smart Monitor for RO

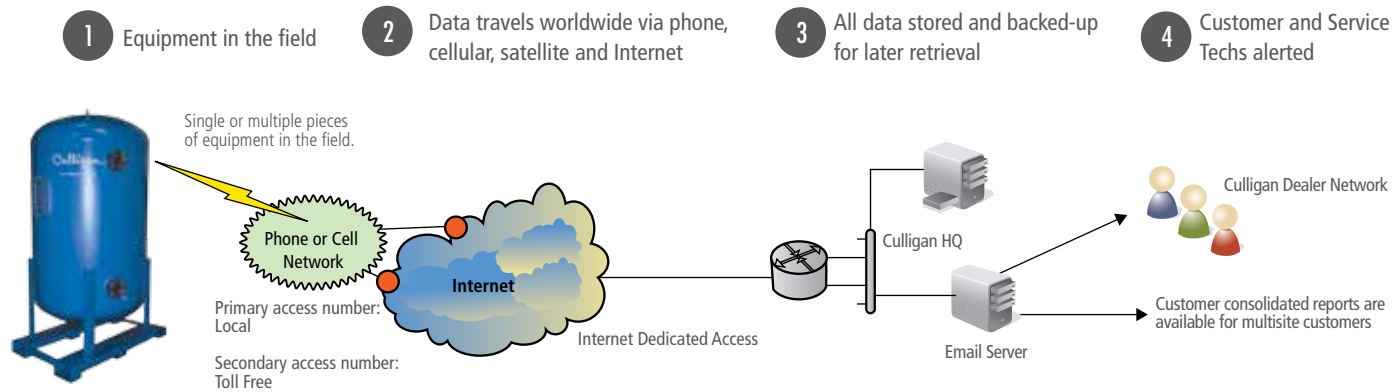
In this mode the Culligan® Smart Monitor supervises a RO system.



How it Works:

The Culligan® Smart Monitor can be connected to flow meters, water quality (TDS) probe, temperature probes, and pressure transducers monitoring the performance of an RO system. With the pressure transducers on membrane feed and waste lines, product flow meter and a temperature probe, the Smart Monitor can calculate normalized flow through the membranes. With the flow meters the Smart monitor can calculate % recovery and % rejection. Furthermore, limits can be set on %recovery, % rejection, product TDS, water temperature and pressure so that the system generates an appropriate error message if a limit is exceeded. Many RO controllers have a dry contact alarm output. A dry contact output can be connected to one of the switch inputs on the Culligan® Smart Monitor.

A Global Monitoring Solution with Customized Local Service



Exclusive Culligan® Smart Controller for PEDI and Smart Monitor Features Include:

- **Historical Operating Data**
  Starting at the time of installation, system operating data is stored and can be accessed to monitor trends over time.

- **Alarm Recognitions**
  The Culligan® Smart Controller allows you to monitor and set lower and upper limits on a number of system parameters.

- **SCADA / Control Room PLC Interface**
  The Culligan® Smart Controller can operate as a remote terminal unit (RTU) and can be monitored directly by the Customer's control room SCADA system. Connections are available for RS232, RS485, USB and Modbus communication networks.

- **Telemetry Options**
  With telemetry options, you can connect your Commercial and Industrial water treatment system via landline or cellular phone to Culligan®.

Benefits of using the Culligan® Smart Controller for PEDI and the Culligan® Smart Monitor

- **Reduced labor costs**
  The Culligan® Smart Controller for PEDI systems automatically switches banks eliminating the need for manual control, which helps reduce labor costs.

- **Help customer quickly respond to system variations and promote consistent water quality**
  The alarm recognition feature provides an alarm output if specific limits for system parameters are exceeded, allowing the customer to respond quickly to system variations and promote consistent water quality.

- **Predictability of maintenance**
  The historical operating data feature, allows customers to monitor trends over time and predict maintenance schedules.

- **Continuous monitoring and control 24/7 with local service**
  The telemetry feature and the Culligan® dealer service network allow us to monitor a water treatment system centrally and service the system locally.

Culligan®

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For over 80 years, Culligan® has made better water. Our global network, comprised of 800+ dealers and international licensees in over 90 countries, is dedicated to addressing your water-related problems. As a worldwide leader in water treatment, our sales representatives and service technicians are familiar with the local water conditions in your area. Being global and local position us to deliver customized solutions to commercial and industrial water issues that affect your business and your bottom line.

Part No. 47201

Culligan® Available Options

Customize your water treatment equipment for improved return on investment

To operate your facility at improved levels of efficiency and achieve accelerated ROI, customize your water treatment system with Culligan® exclusive accessories:

- Brine Reclaim
- Aqua Sensor®
- Progressive Flow.

Culligan® exclusive accessories are part of Culligan® Commercial and Industrial Solutions that combine durable and efficient equipment, systems experience, and technical experts who understand your unique requirements. From planning your system to installing your water treatment equipment, Culligan® Commercial and Industrial Solutions offer options that help deliver the quality of water to meet your needs.

CULLIGAN® COMMERCIAL & INDUSTRIAL ADVANTAGES:

- Simple System Integration
- Global Product Platform
- Flexible Configurations
- Quick Delivery / Easy Installation
- Exclusive Culligan Advanced Electronics
  - Historical Operating Data
  - Alarm Recognitions
  - US Standard and Metric Readings
  - Wireless Remote Monitoring Options
  - Telemetry Options

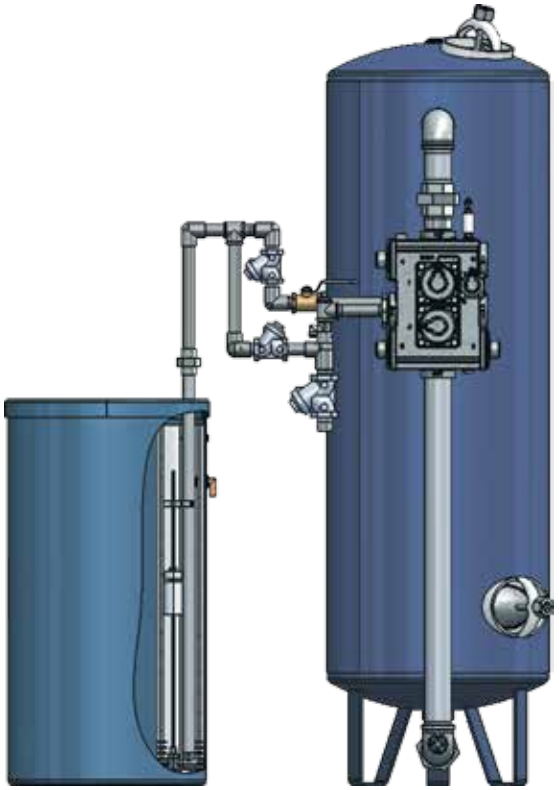
Markets Served:

Clinics
Educational Facilities
Energy / Power
Food / Beverage Production
Food Service / Restaurants
Grocery
Healthcare / Hospitals / Bio-Pharmaceutical
Hospitality / Lodging
Manufacturing
Municipal Drinking Water
Oil / Gas

Culligan® Brine Reclaim

HOW IT WORKS:

Culligan's Brine Reclaim technology returns a portion of reusable brine to the brine tank during a softener regeneration. During a typical softener regeneration brine is directed from the salt tank to the softener and then to drain. During the first part of the brine cycle the brine is laden with "hardness". During the later part of the regeneration cycle the "hardness" laden brine is replaced with "soft or sweet brine". With Brine Reclaim the "sweet brine" is diverted back to the salt tank to be used in the next regeneration cycle. The amount of brine directed to the brine tank is directly proportional to amount of salt saved.



BENEFITS

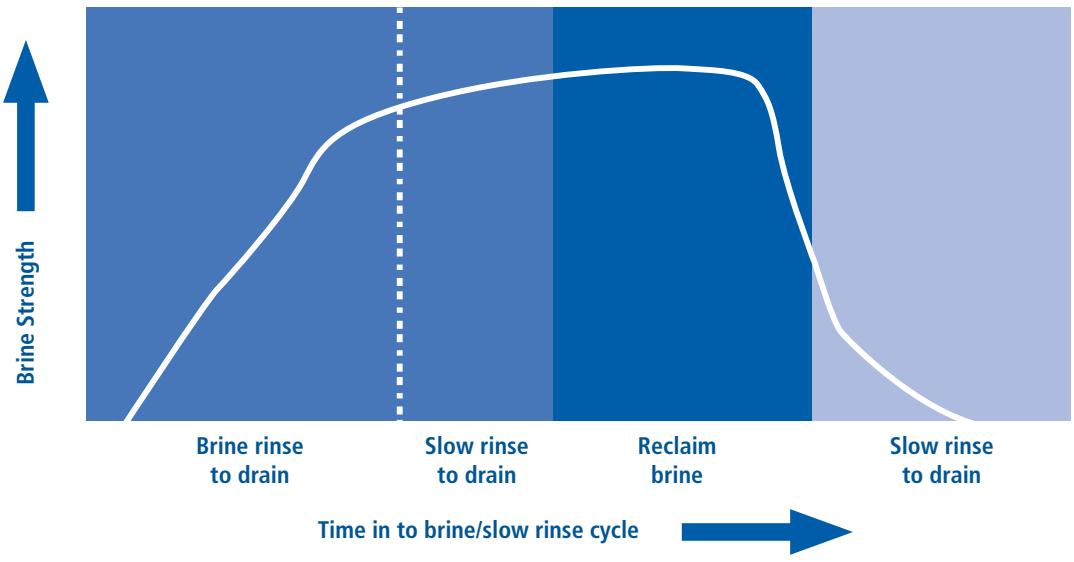
This solution enables your softener and your entire water treatment system to operate at improved efficiency.

BRINE RECLAIM CAN PROVIDE THE FOLLOWING BENEFITS:

- Reduced salt usage up to 25%
- Reduced water usage
- Reduced sewage costs as a result of reduced discharge to drain
- Reduced labor costs (salt loading costs)
- Increased Efficiency
- Improved return on investment (ROI)

Brine Reclaim can be retrofitted to improve your existing water softener, or can complete your end-to-end Commercial and Industrial Solutions system.

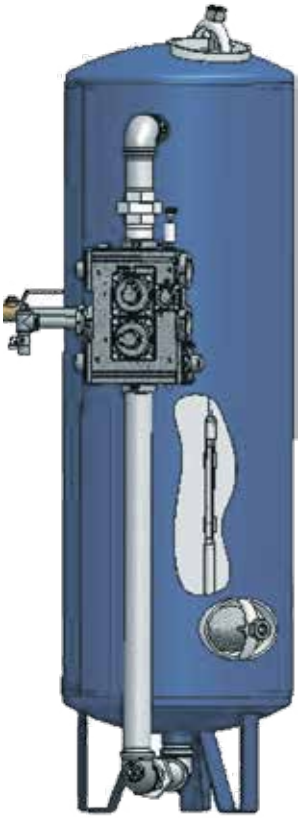
Typical Brine Curve for a Softener



Culligan® Aqua Sensor

HOW IT WORKS:

With Culligan® Aqua Sensor technology, an internal probe monitors the conductivity of the softener resin bed. Based on the measurements, it signals the need for regeneration when the softener is nearing exhaustion. The Aqua Sensor also monitors conductivity of the resin bed during the regeneration cycle. As a result, it controls the duration of the brine cycle.



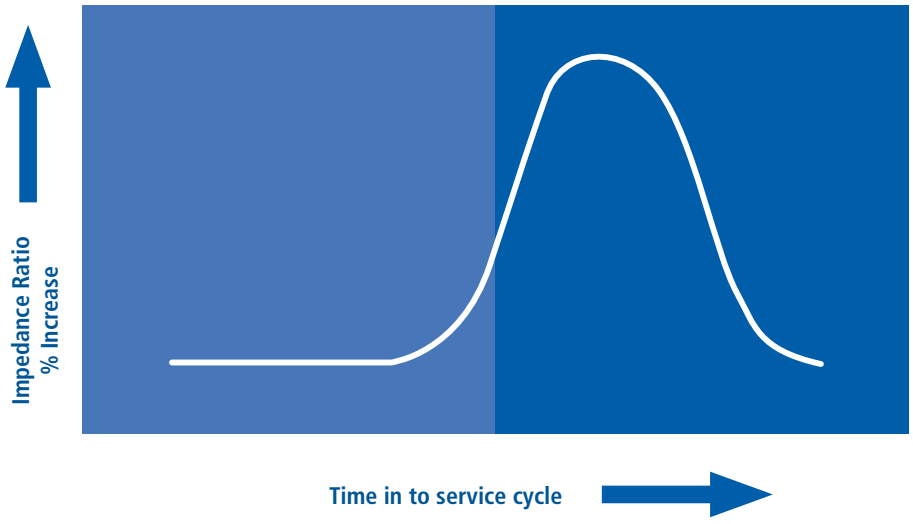
BENEFITS

Most softeners regenerate based on time or water flow, wasting salt and water. The Aqua Sensor adjust for influent water conditions (water quality, pressure, flow rate, temperature etc.) and provides for a more efficient softener operation.

AQUA SENSOR PROVIDES THE FOLLOWING BENEFITS:

- Significant salt savings
- Significant water savings
- Reduced operating costs
- Improved return on investment (ROI).

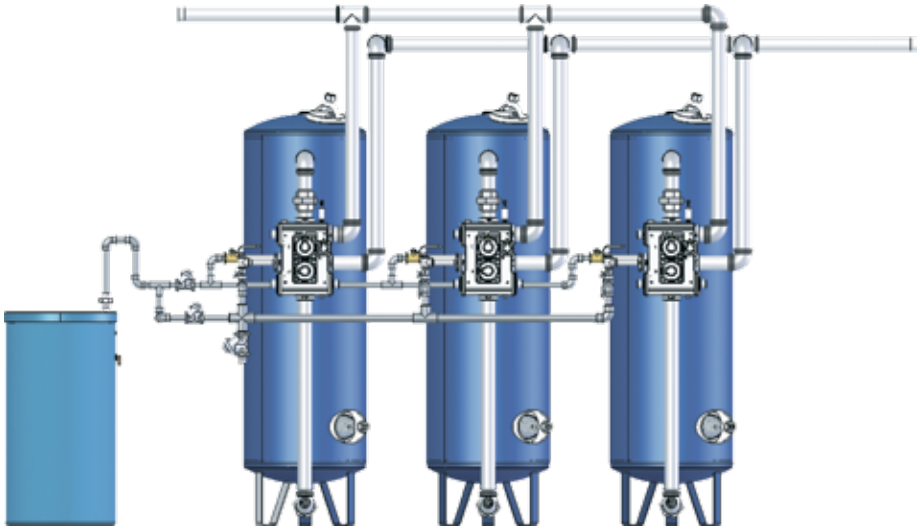
Typical Aqua Sensor Measurements during a Service Cycle



Culligan® Progressive Flow

HOW IT WORKS:

The Culligan® Progressive Flow feature allows for one or more tank in a multiple tank softener or filter system to either be online or offline based on downstream flow demand. The Culligan® Smart Controller monitors water demand and brings additional tanks online or offline as the flow demand changes. The feature is best suited for applications requiring intermittent/periodic high flow rates.



BENEFITS

Culligan designs your unique system based on your specific requirements—feed water, production and installation needs. With Progressive Flow,

Culligan® Commercial and Industrial Solutions efficiency and cost savings are built into every water treatment system.

PROGRESSIVE FLOW PROVIDES THE FOLLOWING BENEFITS:

- Yields higher water flow rates using smaller tanks
- Improved efficiency
- Reduced initial capital costs
- Reduced operating costs
- Efficient use of space

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