CONSOLIDATING MEASUREMENT LINES

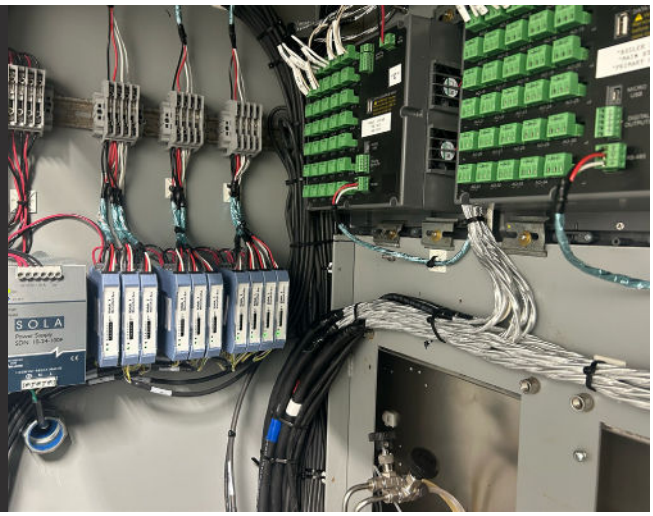
In Steam Water Analysis Systems

pH
SE558

Conductivity
SE625

Transmitter
MEMORAIL MODBUS

Sample Conditioning
SAMPLE PANEL



Facts about SWAS

- In power generation, steam water analysis systems (SWAS) keep water chemistry in check and plants running safely
- Steam and condensate lines operate at volatile temperatures, and both pH and conductivity are temperature-dependent measurements
- Sample conditioning systems cool samples to safe and stable temperatures before analysis

Managing Measurement Points & Accuracy in SWAS

A SWAS system acts like the early warning system for a steam cycle in power plants, and pH and conductivity are its most critical measurement points. Monitoring these parameters ensures the water chemistry remains in optimal ranges, helping protect expensive assets, avoid unplanned outages, and maximize operational efficiency.

If pH and conductivity monitoring are inaccurate or inconsistent, the buildup of salts and other suspended solids can result in fouling and serious damage to plant infrastructure. This can lead to the risk of needing full-scale blow-downs or even full replacements of equipment, which is extremely costly.

In SWAS systems, measurement redundancy is essential. But with multiple transmitters, space quickly becomes a problem. With Memorail Modbus, operators can considerably consolidate the available space on the measurement line. MemoRail is a compact, digital transmitter configurable with up to 2 sensor inputs. Up to 32 Modbus RTU devices can operate in parallel, giving SWAS engineers a massive advantage in space consolidation.

While space consolidation is important, measurement accuracy is also critical in maintaining uptime and the overall health of steam water analysis systems. For pH measurements, the SE558 is ideal for ultrapure conditions. Three ceramic junctions and a pressurized reference system prevent junction fouling and contamination, vastly extending sensor life and reliability.

The SE625 offers an ideal solution for conductivity measurements in SWAS. Designed for accuracy in very low conductivity ranges, the SE625 is the ideal choice for detecting trace contamination in ultrapure boiler feedwater and condensate. This is extremely important, as even trace contaminants can lead to corrosion and fouling.

Water temperature in SWAS is also dangerously high. Consequently, systems typically require sample cooling before the media can be measured, which avoids damage or inaccuracy from volatile temperatures. M4 Knick provides full sample conditioning panels for these requirements. Tailored solutions meet needs from full panels to individual components such as coolers, resin columns, or pressure and temperature valves.

Return on Investment

Save Valuable Space
Wiring each device to a controller in tandem significantly reduces the controller space required and the time spent moving between various controllers and transmitters.

Corrosion Prevention
Consistent and accurate pH and conductivity measurements help identify corrosion and fouling risks before plant infrastructure is in danger of becoming damaged.

Reduced Calibration Frequency
The pre-calibration capabilities of Memosens sensors allow for the digital storage of calibration data, saving significant time on in-field calibrations and sensor swapping.