Tired of trying to do more with less?

With many power plants facing razor thin profit margins, the pressure is on to reduce costs, and in some cases that means reducing the staffing involved in plant maintenance. In such situations, the remaining maintenance team is left trying to do more with a smaller budget and in fewer hours. Anyone dealing with this type of work environment would find it frustrating and tiring.

When it comes to the maintenance of critical water chemistry analytics equipment, most vendors of these products are pushing the same old analog transmitters, sensors and analyzers that have been on the market for years. With this old, core technology they have no solutions to offer that would help plant maintenance teams break out of this scenario.

METTLER TOLEDO Thornton has listened to plant maintenance teams from around the world and developed new, digital-based technology that reduces the overall frequency of analytical sensor calibration and maintenance, and in addition, simplifies them. Intelligent Sensor Management (ISM®) is a process analytics platform that uses the power of on-board microprocessors to provide worry-free measurement points and maximum confidence in your processes.

**Five Ways Digital Sensors Simplify Calibration and Maintenance**

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Here are five ways ISM sensors can simplify calibration and maintenance in your plant:

1. **Sensor calibration wherever it’s convenient**
ISM sensors can be calibrated in any convenient location, such as a lab, under controlled conditions. Sensors can then be stored until they’re required. The calibration data, held in on-board memory, goes back with the sensor to the installation point, eliminating the possibility of operator error. As well as being very convenient for the maintenance or calibration technician, this ability to calibrate sensors under lab conditions can make measurements more reliable.

2. **Plug and Measure startup saves time**
To configure a conventional transmitter with analog conductivity sensors, steps include selecting the sensor type, choosing measurement units and entering the cell constant and temperature factors. Because ISM sensors retain their calibration data, when one is connected to an ISM transmitter, the instrument automatically recognizes the sensor type and its calibration data, and immediately configures itself without any operator involvement. This Plug and Measure capability can save significant time when a sensor needs to be removed for calibration or replacement.
3. Predictive diagnostics tell you when service will be required
ISM sensors feature real-time predictive diagnostics that provide advance warning of when service will be needed, critically, before sensor failure or loss of accuracy occurs. This increases the efficiency of maintenance scheduling and can eliminate unnecessary servicing.

ISM’s predictive diagnostic tools include:
- Adaptive Calibration Timer
- Time To Maintenance
- Dynamic Lifetime Indicator

ISM transmitters display the diagnostic tools for each connected sensor and output the data for remote monitoring. With this information, maintenance of sensors can be managed in an orderly and efficient way. Advance notification of the need for sensor calibration or service is always available. This enables more effective use of maintenance technician time.

4. UniCond® sensors eliminate the need for different models of conductivity sensor
METTLER TOLEDO Thornton’s ISM UniCond sensors can measure ultrapure water with higher accuracy than their analog counterparts, and the same sensor can measure up to the range of seawater. This means the same sensor model can be used throughout a makeup water treatment system as well as for all cycle chemistry monitoring points. Such interchangeability makes any mix-up of replacement sensors and spare parts impossible. In addition, this standardization improves the long-term dependability of all of the measurements and simplifies the maintenance of spare parts.
5. Pure Water Optical Dissolved Oxygen sensor significantly reduces maintenance
Power plants around the world are discovering the benefits of optical dissolved oxygen sensors. Reduced maintenance time, labor and costs plus improved performance and accuracy are all benefits that can be achieved by switching from polarographic/amperometric membrane-based sensors to Thornton’s Optical Dissolved Oxygen (ODO) sensor. With this new technology, exchanging membranes and polarization delay time are eliminated. The sensor contains no electrolyte, and the maintenance and calibration intervals are greatly extended. Performance advantages include a much more rapid response to changes in dissolved oxygen level. Of course, like other ISM sensors, the Thornton ODO also includes built-in diagnostics that inform operators when service or calibration will be needed.

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