

Wireless Corrosion Monitoring



Most industrial plant operators use corrosion or weight loss coupons or another traditional monitoring method like electrical resistance to detect corrosion and improve asset life. While coupons may appear inexpensive, these traditional methods are generally characterized by data latency. With their inability to provide real-time data, these corrosion monitoring methods provide a rear-view window into the corrosion effects that occurred days or months in the past. Additionally, the data is averaged and not reliable to use for corrective actions or operational decisions.

In addition, the data is typically reported manually and does not support easy integration with other process data or events. Furthermore, the data can be in a format or style that does not integrate or match data or events from process control systems or other preprocessed data. These issues make it difficult to use corrosion data in the process control room.

Benefits of Wireless Corrosion Monitoring

Wireless technology offers an innovative, cost-effective alternative. Plants realize the value in real-time, online corrosion monitoring but are often hindered due to implementation costs of a wired solution.

OneWireless™ SmartCET corrosion monitoring lowers the financial impact and operational implementation hurdles. Wiring costs, which can be between four and eight times the cost of the monitoring equipment, becomes a non-factor. Implementing real-time corrosion monitoring provides clearly identifiable benefits, including:

- **Ease of deployment:** OneWireless SmartCET can be an easy replacement of traditional corrosion monitoring technology.
- **Cost-effective deployment:** With a scalable OneWireless network, after the initial system installation, each additional monitoring location is just the cost of a transmitter and its probe. Routine maintenance is substantially reduced as compared to coupons or ER probes, thereby freeing up plant resources to address other more strategic tasks. Manual integration with other process data is a thing of the past with deployment of an online system.
- **Simple and powerful solution:** Data is preprocessed into values that can be used by plant operators directly. Additional software is not required to manipulate or process raw data, as with other methods. With processed data and new data every 30 seconds, corrosion data can now be an input to closed loop, advanced control or optimization programs.
- **Reliable, secure and scalable infrastructure:** The OneWireless solution can carry process and maintenance data over the same network. Correlation with maintenance and operator tasks is possible by enabling mobile workers with wireless technology, eliminating sifting through maintenance logs and matching tasks with corrosion data. It can all be integrated into one set of data.
- **DCS Integration:** The OneWireless solution integrates with legacy Honeywell systems and the Experion® Process Knowledge System (PKS). Bringing corrosion data as a real-time process variable is the start to understanding the cause of corrosion events. The 30-second cycle time allows corrosion data to fit into control schemes like a closed-loop inhibitor addition.

Monitoring real-time online corrosion data provides multiple benefits. A chemical producer found that corrosion was spiking when it increased the use of neutralizer. Another chemical producer with two identical process units discovered that the higher levels of corrosion in one unit were due to a leaky valve. Another example from a pulp and paper mill demonstrates a correlation between a twofold increase in corrosion rate with the restart of a pump in the black liquor process. These three users identified corrosion issues and were able to quickly determine or correlate the root cause. Coupons and other corrosion monitoring technologies would have failed to provide the information that led to identifying the underlying and correlating events.

Measuring water quality in cooling towers is another application that can easily be targeted for OneWireless. These towers are spread over several hundred acres in a typical refinery and many areas are not supported by cabling or power. Wireless technology enables gathering the hard to reach data to help companies actively manage tower water quality. Water conditions affect all boilers, heat exchangers and if corrosion is high, equipment life is negatively affected. Operators and reliability personnel combat general corrosion and, in particular, pitting corrosion to guard against damage to plant assets in order to ensure the long-term integrity of the cooling system. Keeping the cooling processes at full capacity and maximum uptime also enables other process units to operate at maximum reliability.

Enabling Business Changes

Cost savings is only one financial consideration for implementing OneWireless over a traditional wired approach. Wireless corrosion monitoring can enable a competitive business advantage. Whether it is in refining, chemicals or another industry, the ability to process different feedstocks, often with cheaper and more corrosive material, allows companies to gain a financial advantage. This advantage comes from being able to determine the effects of the feedstock in real time to make process changes to lower the corrosive effects. Traditional corrosion data is unable to provide the information necessary to enact this type of business strategy – the hidden cost is the lost opportunity of not having the right data when you need it. Real-time, online corrosion data helps operating companies take advantage of strategic business opportunities.

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More Information

For more information on Honeywell's OneWireless Solutions, visit www.honeywell.com/ps/wireless or contact your Honeywell account manager.

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